The Morality of Nature

Robert Williams Gibson

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WITHDRAWN

With the Compliments

of the Author

THE MORALITY OF NATURE

A DISCUSSION OF CONDUCT IN EVOLUTION

BY

ROBERT WILLIAMS GIBSON

In the light of the recent discoveries of Biological Science, the Life of Man is here revealed, not as a single brief existence ending in an unfathomable void; but as the magnificent progress of an undying organism through a succession of material embodiments, ever renewing its youth and advancing its endowments toward a Godlike perfection. It is a noble and inspiring conception of the future of humanity in continuing Evolution.

The author maintains this view, not by Mysticism or Romance, but by logical deductions from accepted scientific facts, which, although greatly appreciated as facts, have yet been insufficiently studied as the fundamentals of Nature's inexorable morality.

This is a Philosophy of Realities.

Without attempting to write a new moral code or to change an old one, the author discusses the natural basis upon which all codes rest, a basis which may be more clearly seen in the recent revelations of modern biological science.

THE MORALITY OF NATURE

BY

ROBERT WILLIAMS GIBSON

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FOREWORD

A MAN now of mature years, who began his reading when the epoch-making works of Charles Robert Darwin were new books, has been privileged to share in a marvellous period of human advancement.

The new discoveries in those sciences which explore the prehistoric past of the world, and especially those which pertain to the progress of life have promoted that central idea expressed by the word evolution from the status of a theory to that of an established principle—a necessary part of the educational equipment of any thinking man.

He who does not recognize evolution today is in the same class with those who do not believe that the earth is round. These are no longer questions to be argued, they are facts which are established in proofs so convincing that a little reading is all that is needed to make them clear.

To provide that little reading in regard to evolution is one of the purposes of this book. It is treated last because it is here only accessory to the chief arguments which precede it; but a reader who so desires may go over this explanation of evolution first. It is broad and general rather than of detailed completeness. It will not satisfy the biologist any more than a landscape-painter's view of a forest scene would satisfy a botanist; but it has advantages nevertheless.

The prime purpose of this work is the consideration of Man as a participant in this great Evolution forward and upward.

It seems surprising that while so many scientists are

elucidating their profoundly impressive facts, so few—one might say none—of them go beyond the facts and discuss their meanings and consequences. Yet it is natural. This regard for objective truths to the exclusion of anything which cannot be demonstrated is in its sphere a fine quality, and is indeed the distinguishing characteristic of modern science. But after all it is not everything. It is the material body of wisdom—the spirit is more elusive. Induction is a different function of the intellect in which our western civilization is deficient as compared with the oriental.

It still remains for us to assimilate the facts, and to evoke those new dreams and hopes which tomorrow shall be truths and laws. We must infer and reason and think out changes in our concepts of things which we call spiritual and psychological—we must use our deductive powers and imaginations —our emotional aspirations—we must study this new knowledge and try to understand its meaning and its promises; and above all we must try to understand ourselves—self-realization is the Divine achievement.

This present effort falls short of what is to be desired, but the absence of better is its excuse.

R. W. G.

January, 1923.

CONTENTS

BOOK I

THE ORIGIN OF MORAL CONDUCT

CHAPTER		PAGE
I.	Introductory—The New Knowledge	3
II.	Conduct	8
III.	Responsibility in Relation to Nature	14
IV.	Relation to Animate Nature	24
V.	Individuality	32
VI.	Associated Responsibility	39
VII.	Elementary Morality	46
VIII.	Heredity	54
IX.	Environment and Variation	63
X.	The Function of Death	71
XI.	Justice in Death	82
XII.	The Conduct Unit	102
XIII.	Compensations	107
XIV.	Time and Consequence	112
XV.	Unity of Life	122
XVI.	Potential Immorality	128
XVII.	Life's Value and Aim	134

BOOK II

MORALITY OF THE DUAL LIFE

CHAPTER		PAGE
I.	Co-operation Instinctive	141
II.	Altruism Fundamental	150
III.	Dependent Life	159
IV.	Specialized Life	164
V.	Altruism a Conscious Ideal	169
VI.	Destructive Rivalry	172
VII.	Associated Motives Multiplex	178
VIII.	Moral Motive	188
IX.	The Goal of Aspiring Morality	194
X.	Variable Ideals	201
XI.	Variable Organization	208
XII.	Authority	214
XIII.	The Altruistic Type of Government	219
XIV.	Emancipation of Belief	238
XV.	Education	244
XVI.	Conscience	250
XVII.	Faith	257
XVIII.	Conclusions	262

BOOK III

LIFE IN EVOLUTION

I.	Conduct in Evolution	273
II.	Evolution is Progress	281

CHAPTER PAGE

III.—Time and the Geological Record . . 289

IV.—Change is Normal 304

V.—Descent of Man 309

VI.—Physical Limitations 316

VII.—The Biological Record 319

VIII.—Karyokinesis 325

IX.—Embryology 332

X.—Effects of Environment 339

XI.—Distribution of Heredity 346

XII.—Evolution of Sex 350

XIII.—Distribution by Sex 358

XIV.—Multicellular Bodies 364

XV.—The True Ego 369

XVI.—Aspiration in Evolution is Morality . . 374

XVII.—Today is Always the Day of Evolution . 381

XVIII.—Humanity in Limited Privilege . . . 384

XIX.—Human Consciousness 390

XX.—Free Activities 395

XXI.—Organization 401

XXII.—Summary and Conclusion 404

The Morality of Nature

BOOK I

The Origin of Moral Conduct

CHAPTER I

INTRODUCTORY—THE NEW KNOWLEDGE

MORAL conduct is a system evolved under the stress of experience for the benefit of the individual and the race.

The wonderful discoveries of modern science and especially those of Biological Science throw new light of distinctive value upon the old great questions of the nature and destiny of life and upon its obligations and duties and privileges. And in that light many things are clearly seen as material realities which have hitherto appeared only as imperfectly understood intuitions or in the guise of laws proclaimed by supernormal wisdom.

The effect of these new revelations upon older knowledge is necessarily twofold. First it must deny or correct, as all new wisdom does, that which is erroneous or imperfect in old beliefs and laws; and next, it must apply its new truths in reconstructive effect. But it is a much easier and a much speedier process to destroy than to reconstruct. A single blow shattering an obsolete dogma of religion or a law of moral conduct may involve in the wreck a whole train of dependent beliefs; and this destruction may be doubly unfortunate when as sometimes occurs, the new truth is able to afford support to the old, were it only properly apprehended.

It is the purpose of this work to present some discussions

of these newer view points, in such a way, and with such suggestions, as will help the constructive reasoning of the reader. It is believed that a real need exists and a true desire prevails, for more familiarity with the new science, which now, instead of being general, is unintentionally made the privilege of a class, by the technicality of its expression. Both in research and in philosophy the doctors use vocabularies and one might almost say languages, which are unintelligible to all but the initiated, and there is a peculiar prejudice in favor of objective facts and an aversion to inference and inductive reasoning.

So startling destructive truths are presented with a brevity which carries them the farther because of its faultiness, and the fair and true import of them is left unexpressed, partly because such understanding demands longer time, and partly because it is not strictly due from the scientific source, but is properly the work of another type of reasoning, namely the philosophic and metaphysical.

It is intended, therefore, to address ordinary people in language as ordinary as possible; and to interpret some parts of the technical facts which bear upon the special subject, which is the conduct of humanity in evolutionary aspect, its beginnings in animal life, and its promotion to and by morality. A scientific and reasoned basis for conduct is thus presented, without any trespass upon or any appeal to, supernaturally inspired authority. It is not assumed to discuss the value of knowledge coming from sources other than normal. The possibility of the existence of such a source would be conceded in a pursuit of the philosophical idea which underlies this work, which leads to the conception of

an Absolute of unknowable nature as the finality, and a First Cause equally unknowable as the prime of all things. But this is an effort to reason causes and effects, and is limited in its consideration to the things of normal nature.

The great central truth, among the many revealed by modern science is the immortality of the natural life of the egoplasm, and it is around this dominating fact that all this argument is arranged. The fact that every new life is but the continuing part of the old germ-plasm which has the potency to grow a new reproduction of the elaborate body, a living offshoot which does not die when the parent dies—this simple fact is destined to profoundly alter our concepts of morality. Although this astounding discovery has been some time announced, it has not yet begun to receive the attention which its amazing import demands. The activities of life in this qualification and in the correlative one of cumulative heredity are found to be subject to a system of compensation of conduct in material things, which hitherto has been completed only by appeal to external adjustment. In this subjection a morality prevails which is inevitable, and which imposes itself upon the theist and the atheist with equal force; and which therefore neglects for the present their point of difference.

The main thread of this argument therefore reasserts the importance of heredity; and if this line of thought is correct the effort will furnish its own apology, since the transmission by age to youth, of certain deductions from experience; which was the first purpose of this work, is the final phase of hereditary transfer. And it is tendered in full recognition of the reader's need of and right to his individu-

ality. Communicated belief cannot pretend to be a substitute for personal experience and preception; but it serves as a base for that highest phase of studentship, and as an expression of that oldest of old facts in heredity; that moral knowledge is received by youth from age because it can accumulate in no other way.

There is no attempt here to announce any new discovery in natural or psychological science. Assertions in these subjects when made are rather quoted as being of established truth; or else as frank hypotheses; and there is no apology offered for the repetition of truths well known of old, or of those newly revealed by modern research; because all such are presented, not to declare them, but only to use them as a basis for reasoning. A general apology is made for the free use of newly published knowledge without separate quotation of authority. This liberty is taken because it is not as announcements of science but as arguments in morality, that these things are presented. It is sought to avoid controversy and to make affirmation in a confessedly imperfect form, without demonstrations. Those who work in these matters know better than any others, the transitory nature of wisdom and its liability to correction. Where so much is hypothesis and where the positive is so frequently superseded, it would be futile to build in a pretense of stability.

Ethical inquiry follows paths, not only of logic, but those of natural impulse and sentiment, in a belief that impulses inborn and inherited did not arise without reason, and therein it arrives at some conclusions different from those which philosophy attains by logical synthesis. The common aspirations of men sometimes lead to ideals which are by

the wise called illogical. Yet if they are productive and operative in actual life we may find them entitled to a place in any discussion of conduct and none the less worthy in being indefinable. Humanity declines to accept as the only alternative to a theology which is outgrown, a materialism which denies imagination, and which would restrict all future time to its own present conceptions.

In this endeavor to follow where ideals lead, there must be no intention to evade reason, or to fear the logic of any argument or fact. If the study develops conclusions different from those in vogue the difference lies often in the point of view and not in a conflict of facts. The preference (or prejudice it may be called) of the present review is confessedly for reasoning which admits ideals, yet the problems arising in matter are to be viewed with due materialism.

The thing attempted is the search for valuable inferences in regard to facts already known; and these facts are marshalled in a progressive series beginning in observation and analysis of the very old and very simple, and leading upward to the successively higher developments with their early and remote consequences. The point of view may prove in some respects to be at profound interest and of convincing force.

CHAPTER II

CONDUCT

CONDUCT is for a human being the choice of what he will do and what he will not do, the action and way of living of the individual in relation to others and to the universe. The basis of right conduct is self-interest of the most far seeking kind. It is more than mere endurance or deportment; it comes of the will and intelligence, and of an attitude of activity not like that of the lower creatures of mere sentience, which is one of responsive submission. Yet this intelligent volition is not the faculty of humanity only. In its inferior phases it indicates to lower life the course of all voluntary action. Conduct is the behavior of a creature, which, when several courses of deeds are possible, selects and does that which it prefers, instead of accepting the one which is most obvious.

The existence of very primitive creatures is simply the passive acceptance of all things that happen, and of their consequences, and whether an event brings life and sustenance, or whether it brings death; no difference is made in the behavior of the creature; the effects appear in due following of the cause, in a sequence which could not be changed.

In contrast with this way of existing, the creatures which

possess intelligence, even in its dawn, act in the face of circumstances, in purposeful effort to modify them, and so avoid undesired results and gain those sought for. This control of action is Conduct. A definition of it may be further settled by examination of its fundamental motives.

The conception of conduct as a definable factor in the natural activities of life implies the necessity of some discoverable method or system governed by natural law; and the continued order and growth of that system, if such is discovered, invites inquiry in regard to its power and its origin and ends. Especially when men disavow control, as now in evolution of freedom, and seek satisfaction in impulsive liberty of action, it is needful to know what, if anything, determines the value of conduct.

As seen in its simplest forms the purpose of conduct is to influence events by deeds of volition, so as to achieve results which seem to the doer to be advantageous. Whether good effects follow any particular deed will depend upon the knowledge or wisdom of the doer, but it must be allowed that the intent and purpose of any conduct or act, is to attain something desired.

Conduct which achieves the things needed to maintain life and happiness, is good conduct. It is good and right because it is thus successful and not because it has been directed by some person in authority who has declared it good and right. If such an authority ceases, the conduct will still be good if it succeeds in a world where there are many difficulties and dangers. But success does not always attend human efforts. They may be inadequate or defective and so fail, or may be overpowered by accident. Such conduct

is not to be called bad. The bad results are incidental, and although they may overcome the value of the good, it is manifestly a deficiency of good which characterises the conduct. It is not evil conduct of an opposite and irreconcilable quality, but good conduct of insufficient power.

Bad or evil conduct is, broadly speaking, the willful doing of things injurious to others or to oneself. But it is seldom indeed that evil is done for its own sake, even by those condemned as bad. There is always some object sought, which might, under some circumstances be permissible; such as personal benefit or gratification, but which is attained now by a course involving injury to others or to oneself out of proportion to the benefit achieved.

It is easily seen that an early advantage, gained by conduct which entails later harmful consequences, is not to be described as good, unless the benefit is greater than the injury, and of course it is quickly perceived that a good action may be at first involved with deprivation or injury, which in the end will more than repay the loss, in its advantages.

The desire to conceive and carry out action, with a true estimate of its effects, so as to achieve a result primarily desired, is the active guiding force in conduct, and the need of regulating the conception and governing the action justly, so that undesirable effects shall not occur is the restraining force, and of this couple of forces a resultant is sought, which shall take into consideration both; not only viewing the immediate act and the first results, but beyond these, shall consider the long chain of consequences which will or may follow.

An intelligent being conducting himself and governing his actions by the highest motives, will still be limited, however, by his inability to foresee consequences beyond a certain distance. This distance will be greater or less, according to his mental power and experience. He will be limited similarly, after he has more or less clearly conceived his desire, in his knowledge of how to perform it; and again in his physical capacity to execute the plans which he may prepare. Yet, notwithstanding these limitations, the impulse to action remains, and the restraining influence is still felt, and action of some sort cannot be evaded, except by taking refuge in a passive attitude. But passive inaction, when activity would benefit it, must be a neglect of the opportunity. Inaction in such cases evidently is to be regarded as conduct. It involves responsibilities, just as seriously as does activity. Therefore it becomes clear that it is not possible for any individual to evade the demand for conduct or to escape the consequence of conduct. Every creature is confronted by life problems and facts presenting questions which it may avoid by retreat, or may solve, or may ignore. According to the course selected certain events will occur, and they will be thus made different from what they might have been, and in that difference there will arise benefit or injury. The will and power used wrongly will produce harm, and the neglect of their use may permit harm. Equally true it is that the power rightly exercised will induce benefits, and its neglect will let those benefits pass by.

Upon these experiences and assumptions may be founded a definition of conduct as the action and way of living of a

creature having volition, in relation to other creatures and to the universe. From this arises the axiom that the purpose of conduct is to achieve advantages or benefits and the postulate, good conduct is that which finally produces advantageous or beneficial results.

And a general definition of bad conduct may be that by which the object desired is achieved at a cost of injury in excess of its value.

And to this broad conception of the quality of the conduct as judged by its results, must be added, if the right and wrong of voluntary action is to be considered, a regard for the motives. Although the fundamental value and goodness of conduct are decided by its actual success or failure, yet in intelligent human beings who may be concerned in the results there will be usually a consideration of the intention at the bottom of the activity—human resentment of injury will be less when it appears to be accidental and not intended, and human resentment is one of the active forces in the environment which every individual must regard. Motive is one of the early stages of conduct, a preparation for the activity which is to follow, and in an estimate of rightness of action, motive or intention will be a factor to modify the result.

And following this question of motive will appear others. Is conduct, as right or wrong, compensated by anything transcending the mortal life? If so, is the result, or the motive, the criterion of right or wrong? And in natural sequence arises the query—What is the way and manner of compensation for conduct of right or wrong character?

Answers to these questions can be found in natural and demonstrable facts, apart from any dicta or dogma of superior or inspired knowledge, in the results of conduct good or evil according to its worth.

CHAPTER III

RESPONSIBILITY IN RELATION TO NATURE

Observation of life in any stage of organization will show that the great priniciple upon which actual conduct is based and in which its comprehension is to be sought is Responsibility. Responsibility is the condition of liability for the consequences of all action and inaction. Every event or happening, whether of animate nature, or inanimate, becomes a source or center from which successive events arise, or from which these are influenced, by the primary force; until, little by little, its effect ceases to be perceptible. Even after that the impulse continues for a time, long or short, or indefinite. For example, a boulder falling dislodged by a storm, may block a stream and then may become an obstruction or dam, and raise the stream's level above it, so as to change the shores and even compel the running water to take a new course around it, and this may in turn cause erosion of a bank which will wash into the water, and surcharge it with minerals; and from such a change it may happen that soil of a certain kind is deposited in a place where hitherto there has been only soil of other kinds; and this deposit, being covered up, may become a geological specimen to be preserved for ages by its burial. It is evident that for some time to come this region would

be subject to many modifications arising from this natural episode of a falling boulder.

The things which thus occur to inanimate nature are the involuntary outcome of previous events, the necessary effects of preceding causes. Inanimate nature is purely passive, effect follows cause and becomes in turn new cause leading to some other consequences. The action of living creatures with will power, and desires, and freedom and force to execute them, is exerted for the purpose of changing the natural sequence of effects from their causes, and thus shaping events more to the liking of the creature so acting; or for changing its own attitude toward such events in a manner to modify the results to itself. Every living being so exercising the privilege of intelligent life, each one who interposes his action, and causes himself, or the current of natural things, whether purposely or otherwise, to take a course different from what it would have taken, (and to modify a single thing is to modify the current of events)—every creature doing the smallest act of volition, thereby incurs a responsibility for the consequences of his act. This responsibility is not the limited one which the word irresponsible sometimes implies in human stipulation, but is full and complete and inevitable. There is no lessening of the responsibility because of the lack of power of the individual to bear it. This burden is to test the value of the conduct in question by the exact result.

The purpose of man's conduct is to overcome the hostilities of environment by right direction of his will and power. He cannot annul these forces but he must meet them. And in the privilege of thus opposing his will and

act, and changing the world current for his own desires, he is not separated or emancipated from the world hostility. He is still an item in the passive objects of nature, and as such is subject to forces arising beyond his control, just as was the rock, which in the previous example was described as falling by natural accident. His responsibility includes care for all such things,—his manner of opposing adverse circumstances is just as much his conduct as is his manner of meeting favorable conditions. His ability to modify occurrences around him relieves him from the aggressions of these occurrences only to the extent that he successfully uses that ability. The rain will fall on him as it would on the rock unless he secures shelter; the bank will slide beneath him and deposit him in the stream, as mercilessly as it would dispose of inanimate weight, if he remains in the place of danger without opposing it by his power of action. His place in nature is thus one of subjection to all the natural laws and all their consequences, and he is equipped with an organization of will and power, normally enabling him to maintain his existence among these adverse conditions by his active efforts, and he is liable to consequences of failure if his efforts fall below the necessary efficiency. His surroundings may become more adverse by accident or by natural change, and he may have to increase his efforts in order to prevent injury. Or conditions may become easier and he may be benefitted, and may decrease his efforts. But no such changes will afford him a cessation of effort. Nature toward any creature stands as the hunting field of life from which that creature must gather his needs by his own work and at his own risk. His conduct in this quest

determines how much he receives and how long his participation continues. It is evident that this responsibility governs not only mankind, but all living things from the beginning of volition, and even earlier. There is a liability to harmful occurrences in those most primitive lives which have no will or intelligence and to which all events are as accidents. The simple protozoon happening to be where natural surroundings become unfavorable, and having no alternative, dies or languishes while another similar creature nearby lives in prosperity. Without choice the latter receives the beneficial consequences of his position although not apparently merited as a result of action; and the other dies, as if suffering a penalty for being in a place of danger. Here although obviously no responsibility can accrue in the moral sense later implied by the word, yet relentless nature distributes life and death according to facts which make it appear to be by hazard.

So too when a somewhat higher phase of life is in question, and a primitive animal with some power of locomotion seeks to escape a danger, yet fails; it seems to pay a penalty for lack of speed, and however high in the scale of life an organized creature may stand, it is liable to this same destruction by catastrophe. Therein is seen that the responsibility which begins with volition carries along with it, the same primitive liability to destruction. It is only lessened in degree because of the privilege of the dawning will and power to move. This power lessens the danger only a little, yet appreciably, and makes the creature more fit to contend with its difficulties, and those more fit survive and those less fit are destroyed. This survival is the

demonstration of the law of responsibility. For even in the protozoon the power to move implies under certain conditions the duty to move, and to move aright, and the responsibility for moving aright, or not moving; and the manner of meeting this responsibility is one of the beginnings of conduct, the enforced law of living which tends to increase benefits and reduce misfortunes according as it is good or bad. The natural consequences of the conduct befall this creature as inevitably for this simple decision, as they do the most powerful beast or the most subtle human reasoner.

Higher in the scale of life, volition is seen to be much more effective in enabling the creature to escape destruction or injury, for not only is the power to move more effective, but many other capacities aid the animal in self-preservation. The senses are acute, vision, even in early development, assumes importance, and flight is thereby made more effective, and hearing, taste and smell all warn creatures of higher organization of danger. Armor, such as shells, and cold resisting furs; ponderous mass and strength defend some against hurt,—and the use of these things is always assisted by volition. The oyster shuts its shell and opens it according to a judgment of its own, for which it is responsible, and in which error may have serious consequences. And reascending the scale, some animals are found to be marvelously equipped in the higher species. Birds which could not endure the rigors of a frozen winter migrate to a warmer climate, affording a wonderful example of the triumph of volition and power for action over the catastrophe of nature. Beasts which live in lands of hard winter contrive without migrating to

house and shelter themselves for that season. Insects which singly might be impotent, practice the valuable aids of association and organization, and so on.

Where these habits prevail they are always exercised with the same impulse for their use, which is self-preservation and betterment, in short the achievement of benefits, the neglect of which involves suffering, perhaps in the extreme.

These facts show plainly that responsibility for actions, and liability for consequences, as the basis for conduct, apply to life in all grades. It is evident that although the higher animals endowed with superior intellect and powers, can make a more effective contest against adverse circumstances and calamitous accidents; yet the difference between them and the lowest wielders of will is only of degree. The original liabilities are not abolished, and the relief from them is only conditional; and it depends upon the use of the greater powers, which necessitates greater wisdom. The responsibility is of the same nature as before, but involved in a more complicated form, and with opportunities for greater service.

And continuing upward in the review of animal life mankind is found in the same predicament. Even his reasoning power and language, and historic memory and mathematical forecast, have not made an end of his susceptibility to nature's injuries and still less to her cataclysms. He earns his greater freedom, approaching immunity, by cultivation and vigilant use of his abilities. The cessation of his work speedily brings the end of his privilege. Heat and cold and wet and wind; or any one of them, abase him as quickly as it would a worm without brains, when he

fails to secure himself. So somewhere between the two possible extremes, of his fullest preëminence, and his utter extermination; he stands in a place which is the consequence of his free will and actions, of the sum of all the consequences, of all his thoughts and deeds. This sum includes motive only as part of the process of action. It is obviously by results that conduct entails consequence.

These are simple facts clearly seen in nature and easily expressed. From them may be deduced that at least in some phases and cases conduct tends, even if it does not always appear, to bring to pass its own compensation—in beneficial results for good conduct and evil results for bad conduct. The imperfect appearance at times of the truth of this rule is due to a prevalence in many cases of confusing things which do not really contradict it, but which are of unknown values.

This obscurity is, however, of very great effect when the conduct of highly organized creatures is considered. And especially it is so when the complex activity of humanity is concerned in the social units of many individuals.

Then there are impulses and actions so much involved one with another that occurrences cannot be readily traced, as effects of particular causes, and conduct cannot be charged clearly with its proper results. It may then seem that actions which should be considered bad according to simpler experience, do in practice result beneficially to the actor; and actions presumably good may appear to bring injury. And in this apparent failure of the law previously accepted, there is produced a doubt and sometimes even an entire disbelief, of its effectiveness; so that a well inten-

tioned being finds himself convinced that there is in fact no connection between the values of his conduct, according to that standard; and the benefits or injuries produced by it. At this point materialism seems to deny his dawning moral belief and to destroy his ideals, whatever they were, and to substitute nothing in their place except his own view of merely individual preference.

It thus becomes necessary to try to unravel the tangle of the many mixed actions by the many differently impelled human units if we are to find any law governing them. And it is natural to first investigate the instinctive belief in morality, which is evidently a mixture of experiences and of ideals, and to follow the inquiry in a supposition that the old law of responsibility persists, even in this obscurity; and that failure to perceive it is due not to its disappearance but only to a lack of perception.

To formulate and emphasize a principle it is well to recite axioms. In this way emphasis can be laid upon the fact that the highest and latest rules are based upon the simplest and earliest.

It appears then, that elementary conduct and principles of conduct are necessary and common to all life, and are persistent in more complex circumstances; and that simple conduct of man and of complex creatures, is under the same governance as equally simple conduct of earlier, or of any creatures. The complexity appears to arise not as a substitute for the simple, to displace it, but as an addition to it, overlaying it without lessening, but rather increasing, its former importance, when more is built upon it.

In studying collective conduct where many partake in

activity and in consequences, many contradictions appear. Some are real, and show opposing forces; some are matters of expression rather than of fact. For example, an act done by one on behalf of another person may be said to involve that other in the responsibility, and so to contradict the theory of individual liability. Yet analysis shows that two actions are then involved, first the original deed, which is the act of the doer, although offered to the use of another; and second, its rejection or acceptance by the other, which is a separate act. The two individuals are thus responsible, not jointly for one deed, but separately for two distinct things. Every action which is applied toward a fellow being, will thus involve him in a related act of conduct, but not in the same kind of responsibility.

And so too when more than one individual is involved in the joint perpetration of a deed, even if it is directed towards inanimate nature for its object, there is finally a fraction or an influence separately attributable to any one of them, even if it is not capable of abstraction in words and speech. It is clear that in nature where effects follow causes; the thing that the individual actually does, is in question as an operating cause. The deed counts, although it may not have been intended, and although it may not be itself discernible; and although it may be revealed only imperfectly in the consequences at a later time. It must be admitted as part of the proposition of liability that the true extent and value of an action cannot always be susceptible of expression, nay more, may not be discoverable now or at any time, yet it may become clear that the action does produce its consequences, and that they balance the real account

with equity. This comprehension can (and does) arise in a belief that the obscured operations of nature are under laws which can be known in visible facts and can be thence inferred as continuing. With this belief a rule is naturally sought first in the primary facts because they are simple, and is applied to the secondary and later happenings which are complex.

The individual in the relation to inanimate nature, reveals conduct in its elementary form. The use of energy guided by volition of will against the inertia and momentum of matter in the beginning neglects any considerations of duty and morality or obligation except toward self. Such an attitude is not in practice possible, yet it is a valuable conception. It is an attitude based upon the theory scarcely disputable that life must begin its contest with non-living environment, before it becomes crowded enough to create a contest with other life of its own kind.

The law of responsibility based upon this primitive attitude of life towards inanimate nature, with self alone concerned, is one of those standards persisting in which the old principle is not displaced by complications, but only qualified and further defined. The law thus found to cover both man and microbe, is seen to be uniform and not anywhere inconsistent with higher law. There is more of the higher later law applicable to the man, and less to the microbe; so that the primitive is relatively less; but what there is of it for the small, is equally true for the great.

CHAPTER IV

RELATION TO ANIMATE NATURE

The study of the relations between an individual and his animate surroundings, shows him involved in a complex of restraints, yet still impelled by legitimate self-interest as a fundamental motive. Conduct which provokes the anger of associates is bad conduct because it is inexpedient and conversely conduct which meets with general approval is good conduct because it promotes success.

Animal existence is and must be maintained in contact with animate nature as well as with inanimate. Animal life depends for sustenance upon organic material and food, and even the vegetable creation compels a view of, and regard for, its community in character, different from those due to inorganic matter and the so called elements. But being without volition vegetable life is still almost passive under the action of the animal, and although responsive, its response involves him in no duties such as his fellow beings impose. The share which these forces take in man's environment may amount to hostility but not to rivalry.

It is different in regard to other animals. An animal, whether human or brute, is confronted by others of his own kind, and by still more of other kinds, and their action toward him is not passive. They evince desires as he does;

some of them in competition with his; and their mutual actions and reactions are much more interdependent than those which arise in the passive creation.

Toward the individual initiating effort of any kind, the animate life around him is still part of the general world; of the environment or setting in which he maintains himself, but in this part there will be not the passive acceptance of such of his acts as do not directly excite it, there will arise an activity against him or for him which will strongly affect his achievements. The opposition of a creature of similar and equal powers, may balance and neutralize his particular effort, or the coöperation of that creature, doubling the power, may make possible things which could not be done alone. So that in estimating and counting the value of any intention on the part of a living being there arises the need to consider the opinion and probable action of others who may be interested. And even in very lowly orders of beings, where no moral duty can be lodged, there is a necessary consideration for others which is brought about by experience. A predatory insect will resent the near presence of a rival when it has prepared a trap or a web—and the other, knowing the consequences of interference, will retire from an intrusion which would result in harmful quarrel. And so too, among associates, the desire to share in spoil captured, is qualified and restrained even among those of little intelligence, by the knowledge that the possessor will fight, and so for fear alone possession is wisely allowed to be ownership. This may be seen in the conduct of creatures in regard to food, in different species and under diverse conditions, where intelligence is small and no ethical

sense could be looked for, so that this simpler explanation forces itself. It is evidently to be ascribed to a respect for the will and power of the other one, which is implanted in the mentality of any individual who has been subjected to repeated experiences proving that power. Observation shows that such respect is acquired by the education and memory of circumstances, when instinct does not provide it; and when instinctive, it is simply the same education transmitted by heredity from parents who learned it earlier.

Responsibility for an act is therefore seen to include a liability not only for those consequences which it produces as desired in passive nature, but also answerability to other creatures who may resent the act, or on the other hand may be delighted by it. But the simple statement of the problem, with only one or a few of other creatures involved, is almost as theoretical as the idea of passive nature with no fellows present. For in real life countless thousands of creatures, of necessity participate in the consequences of any act; and according to their various capacities they all, from the microbe to the man, do their little or large share in opposing or accelerating it.

A consideration of this joint interest of an unknown number of all creation in the act of one member is revealed by the attitude of very simple creatures. The worm which hides in a hole in the ground does so, not only to avoid the sunshine, but to evade the hunter bird; for him to emerge at inopportune time is dangerous and he knows it, and in his method of life he takes account of birds, and of their comings and goings, because a disregard for them would be disastrous. And he does this with a fair degree of success

although his intelligence is very lowly. And in higher degree, the bird in his turn considers his neighbors of all species in arranging his way of living. He is as watchful as the worm to evade enemies; but having more intelligence, he discriminates and does not flee from friends but will learn to distinguish offences and favors. And in his gregarious life he continually yields way or gives up a share of benefit when others of right demand it. And it is very evident that the reason for all these things lies in a consideration for the consequences of refusing, in other words in a knowledge of harm likely to arise to him, not in a knowledge of the morality, or even of the benefit, of his conduct as conduct, but simply a regard for consequences to him, of one act or another, which he remembers in the past and considers for the present.

All this simple life which is so very familiar that its facts are within the comprehension of children, shows the basic facts concerning conduct, and their simplicity affords the clearest demonstration of that principle of responsibility which makes the individual answerable, even in matters which are suggested for him or imposed upon him by others, and in which others are also interested. So far as his action, or his proportionate share in any action, is concerned, he stands alone. All other creatures separate themselves from him and group themselves together with, and as part of, the general scheme of nature which is his world environment; his setting in the universe. A wrong deed by him will bring its penalty, and upon him it will fall; a false step may take him to destruction. And his fellows around him, even those acting harmoniously and in joint benefit

must have separate self-care, each one watching his own risks and taking his own precautions. The preservation of harmony has not removed the threats of a hostile environment, each still faces danger, with the power and need for exertion so that he may survive separately, or by his participation in collective activity. In short he is responsible for the consequences of his acts, and in the count of those consequences there must be included the actions toward him of his associates. The self-regarding motive of this conduct is not inconsistent with, and does not make it repugnant to, those higher principles which moral ethics develop. They are engrafted upon it to further it, not to overcome it. In the conception of the duties of a mortal individual self there is a confusion of ideas which will clear up only upon careful analysis. Primitive conduct shows in its earliest forms a type of self-love which is free from any stigma. There is no other motive, until associated life confers benefits which create a duty towards others. Then and not until then can selfishness appear as an immoral or wrong motive. As it thus begins, and as it continues in higher conduct, selfishness is the disregard of the debt and obligation to others, which exists simultaneously with the primitive duty to self. But this primitive duty to self does not disappear then or at any later time. It persists as the prime motive of life. It is not selfish. It gives full due regard to others and only a due regard to self, while selfishness has undue regard for self. There is no clearly recognized word in the language for this motive, and the lack is one of the causes of misunderstanding. The word self-love makes the proper distinction from "selfish," of conduct seen in the light of the

due regard for self, distinguished from selfish conduct which has undue regard for self. This proper element in the conduct motive may be called self regard. In the beginning self regard and selfishness are one and the same. The fundamental purpose is for self and the primitive animal impulse is absolutely and simply selfish because it is utterly ignorant of the presence or existence of other factors than the direct first desire, and in the effort at the execution of this desire it is in the beginning unreasoning and unwavering. It succeeds or fails. It is only later in gregarious life that there develops a perception of something more. When growing and crowding life brings creatures of common origin into actual contact, there is enforced and imposed upon those creatures mutual relations of some kind. The necessity of living in contact compels some modification of the independence. If the ancestral community of purpose continues it will organize these separated individuals into a coöperative unit which practices the primal self-regard as a whole, but in so doing limits the right of self in its members. The two kinds of self appear, one applying to the racial life in brotherhood, and the other to the single individual. If the single individual now persist in a regard for self alone, aggression arises, and thus two types of relationship begin. But even when the persisting individual self becomes unduly selfish there is a continual corrective influence which may preserve at least partial harmony.

The opposition of another activity which is provoked by a distasteful act begins to be taken into account as a factor to be considered. The intended action, it then appears, must be so taken as to avoid such opposition. The original

sense of responsibility for one's own success or failure, which still prevails, prompts a desire to conciliate or defer or modify the action. Some of its benefits may be given up in order to attain a portion. Or action in concert may be taken so that if several are concerned each does part and all are gratified. And so arises a sense of duty to others to the extent of recognizing the others force; and perceiving the value of mutual support. This evidently is not in the beginning a result of human moral impulse or of a high intelligence, for even where the organism is of so low a type that anything like declared agreement is impossible, yet obviously disagreement which impedes the business in view is so injurious that both may suffer. Then in comparative or competitive life the peaceable would benefit more and live longer than the needlessly disputatious, and so among the most unintelligent creatures there would develop a more harmonious life by the operation of the law of survival, without any conscious sense of harmony or of duty. Again self-interest appears as the motive. The beginning of duty is in self-interest. Fundamentally the conduct is good or bad for no other reason than that it benefits the individual. Still this benefit is what constitutes its goodness, and when the individual becomes associated with others, even in the intimate relations of human social organization and family; the principle does not change, for although several may participate in joint action as an enlarged self and in that part have joint responsibility, yet each also remains, in regard to other parts of the conduct, in opposed attitude toward the others, separated from them with his special share of consequences in which they may not

share. It must not be supposed that this argument denies the rightness of altruistic acts—on the contrary unselfish conduct is often of the highest benefit to the doer as well as to the intended beneficiary. It facilitates coöperation and organization for united action. It is in fact an activity of the larger associated unit, working to the advantage of that unit, even when to the sacrifice of the individual.

But even in the higher phases of conduct when the mystery of altruism is concerned there remains apparent the isolation of the individual in his own aura and in the meshes of his own web of consequences, from which even love and self-sacrifice, cannot remove him. Individual responsibility is seen to be at the base of the law of conduct and to persist in its entire structure.

CHAPTER V

INDIVIDUALITY

THE facts which show clearly the simple individual impulses and motives, and the immediate consequence in benefit or loss, of the conduct of creatures of primitive type, have their parallels in the fundamental life action of higher animals. It is true of man, as of the lowest creatures, that to continue existence he must procure and absorb food, and in doing so must exercise proper care for its suitability. Just as the shell fish would suffer for an error in this regard, so would the man suffer. For the shell fish this may be nearly the whole business of his life, and the chief of his impulses; and may thus inspire nearly all of his conduct, while for the man it may be but one motive among a thousand others; yet it is evident that the addition of all the other motives has not lessened the force of this primitive one. It is almost surprising that the most advanced intellectual life is still so thoroughly subject in such an unmitigated way to this early obligation of animalism, and to others as imperative, which the philosopher still shares with the frog. It becomes apparent that the direct personal responsibility; the opportunities to profit, and the liabilities to suffer, by individual action, remain unavoidable factors of conduct, even when a complex system of other action has been added.

Humanity prompted by generosity and by all the virtues; or by greed and all the vices; may confuse the issues of impulses, so that responsibility for action is hopelessly obscured, yet there will certainly continue that undercurrent of essential indispensable life action, which the principle of direct personal self-interest still governs, although obscured by the other considerations. Selfish conduct may be masked in circumstances so complex as to seem to make the doer superior to the consequences of wrong doing, but it is really still under the same law. It may be readily observed that to those of dull perception it seems easy to evade responsibility, while to others more intelligent, it is revealed that evasion is less easy. The sense of responsibility thus seems to be often a question of the degree of mental power to unravel the web of future effects. As soon as the reasoning capacity is equal to an understanding of any given chain of events, responsibilty is again revealed. But it must be admitted that there will always be in human action a power to evoke circumstances greater than the power to understand them, a power to do and cause, greater than the ability to foresee effects. And in this limitation there often lies the erroneous belief that at times things can be done which will result, not as they ought, but as they are willed. It must be admitted, that individuals can and do escape in this manner, consequences, as far as they see them, and to that degree and distance they may be exempt. At a later stage the small value of this apparent success will be more evident. The apparent evasion of the primitive rule in a confusion of others is satisfactory only to the intelligence of limited view.

To form a conception of the individual nature of the conduct of several creatures, a separation of an act into parts may be imagined. For example, the recipient of an assistance rendered by another, acts himself in accepting the help, and in the manner of acceptance and in the degree of wisdom in it. If one person acting for himself gives alms and stands accountable for so doing, the other person, he who received them, has acted too for himself and with entirely different responsibility. He may have begged with falsehood or with cowardice, or, on the other hand, he may have only, by misfortune, lost his independence, and may have been honest and reluctant in taking aid. These are matters of his conduct, and for them the giver is not answerable.

Again in the case of what may be called controlled conduct, a man may be nearly powerless to choose his course, by reason of his subjection to forces administered by others, and yet he may be responsible for his previous actions, by which he allowed himself to become thus subject to control. If a man is compelled by his association with others to commit an act commonly considered criminal, when he knows better, and is disinclined, he may possibly be in part absolved of that act, but clearly he might still be chargeable with error in having joined that association. The impelling influences of others will often make them the apparent authors of a controlled action which is to be considered as at least partially chargeable to the individual because of his lack of independence. In such cases the control is really only a certain portion of that surrounding universe, the hostile environment against which the individual must con-

tend; his failure to meet its attacks being his own risk. If a man yield to the temptations of vicious company and indulge in excesses to the neglect of useful work, it is apparent that he will bear in his body the consequent loss of health and fortune just as if he had chosen the conduct. His case in yielding to the temptation is not materially different from that of another man who is tempted to indolence by inanimate nature, by luxurious sunshine and an enervating climate. It is at his own risk that he encounters these inducements—they are outside of him and around him and whether of human origin or otherwise, his conduct when he meets them is his own affair, although a share of the responsibility for developing such conditions may rest upon others.

Similarly if one man commit a direct crime against another, robbery for example, we have in regard to the robber a thing done by him for which he is responsible for himself, not, be it observed, solely to his victim, but, through the laws of nature, to all nature and to himself. It is his responsibility, his deed, and he is answerable for it and for the consequences. The man robbed unites with his peace loving neighbors and collectively they assail the robber and destroy him. But immediate consequences fall upon the victim who is robbed. Here is a distinction less easy to define. The victim, has, in the operation of non-psychological nature, no remedy against the other, however just his claim may be under moral or human laws. He is himself answerable for the way in which he wards off all such antagonisms, and secures compensation. This robber is one of the adversities to be fought just as are disease and storm.

In fact, the robber's action is a crime, only if, and because, he is a member of a society or a race, in which property, as a right, has been established by mutual agreement. It is no crime for a vulture to take part of the prey of another, nor for the shepherd to take the fleece from his sheep, nor for a starving tiger to attack a man. Injury to the victim does not alone constitute the criminality of an act. There is no crime unless the motive and knowledge of the doer is criminal, and no wrong unless the injury is opposed to duty. Even then the situation of the victim is essentially the same, whether crime, or accident, or natural impulse, have brought about the event. The conduct of an assailant may provoke resentment and he may be overwhelmed in retributive justice; yet the conduct of his victim may not even be involved in that chain of circumstances. The victim, however great the consequence of the crime may be, is not thereby reinstated. He is injured as he might have been by wild beasts, and his conduct is in question in the same way as it would then have been, which is in regard to his efforts to save himself, and their effective value and goodness. His conduct is in question. Under this stress of circumstances with what ability does he act and with what measure of success? He was an individual, isolated in responsibility and situated in an adverse hostile world, and the assailant was in a separate isolation with a different environment. The two were in no sense participants in single or similar conduct where the penalizing of one must be a compensation to the other.

Any action to be reviewed as an effect of conduct must therefore be viewed from a different standpoint for each

individual concerned. To the doer only, or a participant, it involves responsibility as a prime act. To any other of the objects of the deed it is one of the incidents of the outside world, of his environment, and to any such, the question of conduct develops, not on the lines of the deed, but on the lines of his attitude toward it.

In this is seen that natural responsibility involves no scheme of restitution until higher phases of morality appear. Responsibility as the thing is meant here is with the doer, the consequences which fall upon others may be resented by them, and by a new activity may be brought back upon the original doer, by action and conduct of the victims, not in an undoing of the first act—that is impossible—but in an execution of secondary acts to compensate those whose interests were affected, or whose impulses were provoked. It is incumbent upon him who is injured to find allies and organize with them for the remedying of the injury.

Assuming then the expediency of calling all the effects of conduct consequences, there arises the need of separately classifying those effects which are to be considered as representing the interests of humanity and of nature at large as opposed to the individual. These effects may be called compensations. The results of selfish volition, it has been seen, often involve others in their consequences. And the securing of compensations by those affected are to be regarded as secondary effects of the original conduct which react upon the doer to his disadvantage and regulate the conduct and give origin and effect to law.

The man who has been robbed unites with his peaceloving neighbors and they agree to aid each other in securing their

proper possessions. Together they overwhelm the wrong-doer in the name of justice and if possible restore the stolen property or other damage. And so the selfish individual finds himself in an environment artificially hostile and if his intelligence gives him clearness of view he is restrained from his selfishness.

CHAPTER VI

ASSOCIATED RESPONSIBILITY

In the primitive natural view conduct appears as good or bad only in a comparative sense. It is first judged in proportion to the benefit or injury secured by the acting individual; and any one action may be good or may be bad according to its effect, which will depend upon environment as well as upon its initial character. There is in this evidently no absolute of goodness or badness, nor even any possibility of recognition of a fixed standard of virtue; nor any ground for a grouping of acts into the two classes of good and evil. It is at first all a question of expediency. The moral law has not any visible force in these conditions. But these conditions pertain only to a life solitary in a sphere of action. Such a life is possible only in a transitory condition, yet it is just in this transitory phase that the principle develops which underlies moral conduct. The lowest life principle begins in a solitude of unconsciousness from which consciousness dawns, having only responsiveness akin to chemical reaction, without volition, and being far below the possession of intention or will. And when these things, volition and will, become evident, there also appears as a thing simultaneously established, the asso-

ciated life of others, which is a necessary accompaniment or condition to their development. The fundamentally selfial principle of the conduct survives; it is never superseded and can never be evaded and never ignored; but the self principle is overlaid by other requirements, which, because of their radical difference of origin maybe to be styled opposing principles. The question of right and wrong conduct for creatures living in company include, as has been seen, not only those of wise or unwise attitude toward the outer world, considered as a hostile environment, but others having in view good or bad relations with the associated company, which may lead to a better achievement in the advantages of joint action instead of opposed action. Courses are changed for these reasons from directly selfish motives to selfial ones indirectly selfish and partly cooperative. They are still adopted, however, as a means to an end; and that end is self-satisfaction; now desired for a community, but still the same one sought in the primary impulse of the individual who had regard solely to his own benefit. His activities are however now linked with those of others, in such a way as to obscure the issue, and in this obscurity it may become difficult to believe that the old principle continues in force. It seems at times, in human consideration, that self-preservation is sin, and self-sacrifice is virtue, and that right and wrong divide on these lines. The issue is thus confused in the multiplication of impulses. The beginning of the new element can always be seen, because it is perpetually renewed. The earliest stages of conduct can be seen in operation today as at the dawn of ethical law. The forms in which will is newly achieved; and

the associated life newly accomplished, are always in sight; and in them conduct appears to take form anew. We may review in lower life now the same evolution in which our own arose. We may see first mere impulse arising in circumstances which impel a sensitive organism, and cause it to react in volition; and then, by survival of the best kind of conduct, volition appears which is distinctly selective, and restrains activities again to things usually acceptable to others. There is in these preferences a frequent giving up of suggested acts which would be unsupported by fellows or distasteful to them; and a favoring or adoption of other acts because though less desired they are approved by those associated. The sacrifice of one's own choice is made because the energy needed to persist in it has been found too great to make the result profitable to the individual—and the accord is given because the act in question can be done with smaller expenditure of power. Now this agreement is seen operating in very primitive life without consciousness of its advantage, or even of its existence. This grade of conduct does not need a perception of benefits. It does not need even highly developed instinct, such as that of the migrating swallow, to organize the first racial association; and still less does it need the disciplinary habits of the deer or wild cattle or wolves. In these animals the question of motive is likely to be confused only a little less than in man and to be attributed incorrectly to a dawning reasoning power. To see the purer, clearer source of this social motive a still lower intellectual capacity should be studied. Observe for example a shoal of little fish, so young that they have scarcely got their definite fishlike form. They exhibit,

already well developed, an instinct for associated life and for agreement and for concerted action. Even this is not the lowest life in which such harmony could be studied, for such habits begin in the lowest creatures as soon as prosperity causes crowding; and prevail wherever such crowding continues. But in a creature like the fish we find an enlightening study because the habit exists clearly established with a very low order of intelligence (especially low in the young of fish). And there it is combined with a well-developed physical structure easily observed. Everyone knows the life of those little inch long things. They appear in shoals which show continual losses; they are chased by larger fish and their weaklings are caught. They swim into shallow water and frequent the shores, evidently to avoid these enemies; and doubtless to find suitable food for themselves. But in all their vicissitudes they keep together, not apparently because of any distinct control or leadership, since, however much the shoal may be broken up into smaller groups, each group never fails of the instinct to move collectively. It is clear that the desire for action in agreement is mutual and common to all. Yet some leadership is shown in each group, a natural result of inequality in the general effort. Movement is chiefly flight for self-preservation, and in this flight the swiftest naturally come to the front, and, as naturally, the others follow. The appointment of a leader is automatic, but the act of following is instinctive. But observe the obedience of this instinctive impulse. All follow to the utmost of their ability. And when some fail through accident or impotence, and lose the desired contact, those who thus separate, if more than one, still look to and follow

someone promoted by new circumstance to the conspicuous place. In all this motion there is little interference. Each one in turn yields a little to prevent collision. There is harmonious concerted action. Assume in one individual an occasion to act alone and selfishly, or better observe one when accident causes such a separation. The solitude is evidently distasteful and unpleasant and the greatest effort is made to recover company.

Now this characteristic love of the society of one's kind seen simply in this lowly grade is evident at some times or ages in various degrees of development in all grades of animal life, and a little reflection will show that it is the broad early expression of a great principle of association which persists into the higher life as the foundation of altruism. In man the instinct is notably strong, as might be expected of a race individually defenceless and weak. In the higher brutes it characterizes the non-combative species and even some aggressive kinds. The cattle and deer and fowls, and insects such as bees and ants, show many gregarious developments. Observe how all of them will form a crowd for instinctive purpose and follow a leader little known and chance appointed, and failing him, will follow another. Or note how in the deeper motives, men physically situated in separation and apart; are still prone to be guided by the intellectual influence of such as find themselves, or put themselves, in front; sometimes as in the case of the fishes, with more readiness than discretion. And see how all the other creatures of this habit, horses and wasps, dogs and sparrows, all actively keep the same association impulse and live by it. Evidently it is a persistent impulse as well

as an early one. On the other hand there are animals notoriously averse to it. Certain species of the carnivora are in this aversion most conspicuous. Their only associating instincts seem to be those incidental and necessary to the sexual and the reproductive habits. They enjoy but a minimum of its benefits, but still these creatures serve to show the universality of the instinct, for even they do not dispense with it. They show its least development, but not at all its negation.

The aggressive species of animals, in their system of conduct, and the aggressive groups among animals whose system is mixed, illustrate again the fact that the old primary necessity of self-preservation and self-maintenance also persists. The idea of self is not removed; it is extended. The extension of the conception of self changes so that it includes others in a larger unit. This is the principle of association which makes a new standard of conduct and gives a clue to the understanding of the mystery of altruism. The theory of it is very different from that idea that self as the evil interest must be suppressed; and that self-abnegation is a virtue in the abstract. Such a notion is an over reaching ideal which is seen to be false. It is not supported by observation of actualities. In the test of real life experience refutes perpetually that assumption. What the facts of life seem to show is that as associated life advances there develop two units of action, the unit of separate or individual action which continues but becomes restricted to certain things; while other matters concern the new enlarged unit of many associates, in other words a new self which includes a number (continually growing) of coöperating

creatures. But even these are still, as in the original primary self, standing in opposition to a hostile world, and each of them is still justified in, nay more dependent on, efforts to overcome its hostility by the self-preserving activities.

CHAPTER VII

ELEMENTARY MORALITY

We have seen that in the beginning gregarious beings organize in the larger units of coöperating numbers, simply because this course is more beneficial and because it favors and promotes those who practice it.

But when among such creatures, the system is definitely settled and all are committed to that way of living, then an individual who profits by the joint conduct comes under obligations to the community, and loses his original right of isolated selfish actions. There is not only a benefit for himself which induces him to act in common with others in regard to present action, but there is advantage to him already acquired by the association and enjoyed by him, which it is his duty to compensate by supporting that system. Now if he could become aware of that obligation, and could then act according to it, that would evidently be a simple phase of moral conduct. But in animals of intelligence so small as to be unaware of their own motives, such conduct must be moral in a different way if it is moral at all. A little consideration will show that conduct may be moral according to the proper meaning of the word irrespective of whether the actor is aware of the reasons for it or of the benefit in it. In man conscientious action opposed to

probability of selfish advantage is counted moral although it may be, and often is, purely instinctive. Therefore similar instinctively right conduct on the part of the animals deserves to be called moral in its own degree. And when this view is accepted the beginning of morality can be clearly seen in certain inferior creatures, who unconsciously found such morality in an instinctive obedience to an impulse which is present in them because it has been proven advantageous to their ancestors and has established certain habits.

To return to observation, consider the situation and action in life, of a swallow, a creature whose conduct is highly instructive; and is available because known to nearly everybody. The swallow is defenceless, small, weak and sensitive, yet highly developed, beautiful, graceful, sociable, devoted to duty, affectionate, and may be fairly called moral in the degree of morality which is instinctive. Swallows organize in great communities for migration, and settle in their territory in amity, yet not without disputes for desirable home sites. Then they pair in admirable partnership, two individuals working devotedly in the hard work of building a home, relieving the labor with gaiety of demeanor and with song; and in time of trouble, when they most need cheer, they know how to keep it. Time spent in watching them is not wasted, nor is the work of telling of it. There is nothing more instructive in a search for the principles of conduct, than the actions which produce a swallow's nest and brood in the spring time. First the place is tentatively chosen because it is liked, but is not hastily adopted. It is discreetly tested by several days of visiting and scrutinizing, and by night watches in the proposed spot itself. Then, if

it seems to be free from danger (and friendly humanity is not counted dangerous) the work begins; and hour after hour, little by little, the materials are brought by miles of flight, with hours of work, and with singing and feeding moments in between. And something in their relations with their fellows protects the work of these birds when they are absent; and something gives them the advantage of amity with other birds who live nearby. When they are at home or when they are out on a joint quest, their property is sacred; the moral sense prevails among them and most of their bird friends in a very high degree. The two are ready with devotion unlimited to fight in defense of the nest against any assailant. The whole colony, less devotedly perhaps, but still with self-sacrifice, will fight for their people's territory. Communal ownership of territory and individual ownership of a home, with consequent rights of property are facts established. Instead of that imperfect morality which fails to stigmatize robbery or assault, which prevails among some creatures of higher intelligence; these have well-marked distinctions of this kind, none the less moral because they are elementary. But these little folk are utterly unconscious of their motives. In this unconsciousness they enjoy decision; they are free from the confusion which often befogs reasoned conduct. They do naturally whatever they do. They do it unhesitatingly and promptly; and when it succeeds, as it generally does, it is convincingly right. The work continues into the labors of parenthood and the impressive lesson continues in the morality of the associated action, as seen in the pair working with self-sacrifice almost to the limit of endurance and risk, and

as seen in the family relations of those who were reared here last season and who now reluctantly are made to find their separate, but nearby places, and as seen in the clan relations of those who only slightly know one another, and who will collect their new families and migrate together. This conduct is moral in the best sense of the word, except only for self-knowledge. Yet we see still persisting in it the primitive altitude of self-defence against externals. Here is a life of peace, yet the fight is ever ready. Here self is lost sight of in duty and affection, yet remembered in an instant with a narrower or wider significance, including one or two or perhaps a dozen individuals, when externals become hostile. Is it not clear that this conduct is of the same nature as human conduct; and that the latter is higher only by the superposition of laws one upon another, the complex on the simple, the advanced upon the rearmost. The swallows' conduct differs from that of lower life, by added law, and not by any reversal or extinction of laws or of the principles of law.

Compare the conduct under like circumstances of a human being. Grant that his intellect is not only more advanced in capacity, but comprehends mental processes different in nature from those of the swallow, notably that conscious contemplation of his own existence and of his mind and workings; and a foreknowledge by inference, from observation of conduct and of some of its consequences. But in all this is it not true that the causes and motive which prompt the swallow also prompt the man, that they produce in him effects and action similar in nature, although affected by new conditions? This is exactly the same need of, and

use for, labor and devotion; and they are applied in the same way for the same purposes; although civilization may invent and append certain modifications of law, and arrange the exchange of labor, and the transfer of it, and of property, between individuals. All that simply means that in the simpler life a duty must be done, and in the complex its doing may be procured instead, which is clearly an extension again of the conduct unit and not an annulment of the principle. And again in the establishment of the obligation to respect property rights by which the swallows enjoy the use of their nests undisturbed by their own kind (though not, be it marked, by all nature) there is evident in rudimentary form the same principle which underlies the property conventions of man.

Now if human action is so closely related to that action of lower nature, human conduct is presumably governed by laws fundamentally similar, but extended to meet new conditions. Such similarity and extension would still permit of the coexistence of laws entirely apart from those of nature, that is to say of supernatural laws, yet these need not have the effect of nullifying the natural law common to all creatures; on the contrary the supernatural might be of higher effect and yet still operate in the same direction as the natural. There is no ground for a supposition that supernatural law must be violated by including man under natural law. The inclusion of humanity and nature generally in the same law and under the same administration of it; suffering the same consequences and compensations to attain similar benefits, does not preclude the possibility of the assumption that man also enjoys a distinct and separate

privilege in regard to a knowledge of supernatural existence. Such an existence and such a privilege are not the subjects of this study except to observe whether they overrule the natural law to such an extent as to reverse or annul it, and that does not seem to be the case. Although there are many things in which supernatural or Divine control appears to act by means not in accord with natural law, these are exceptional, and it seems that these exceptions, even if their truth be admitted, are inadequate to show a reversal or annulment of natural law. The most that they appear to show is a misunderstanding of or a temporary suspension of, or emancipation from, established rules, and they only reinforce the strength of these rules by the surprise caused in the interference.

Therefore it is necessary to accept as evidently true the proposition that human conduct, although differing from that of inferior nature, and enjoying privileges under laws higher in grade, is still subject to fundamental laws of lower grade, which govern and include humanity in the same scheme with the rest of the universe. Thus the former assumption that earlier laws persist and are supplanted but not superseded is again supported. And it becomes clear that the foundation of morality of the unconscious, instinctive kind, lies in its usefulness and benefit; first for the individual who secures in it support and assistance, and second for the newer and larger units of activity which are the associations of families or groups, which find themselves flourishing because they have cultivated a system of co-operation.

In this original purpose human conduct is of the same

law and nature and origin as animal conduct. And human morality is the same as the simple morality of the swallows.

But in attributing morality to creatures not conscious of duty we provoke the question; How do they come to do these things and to do them so well? They are so usual that they seem to be unavoidable; yet a moment's thought will recall that many animals lack this degree of associative capacity. Why do these birds, without conscious foresight, prepare for eventualities so wisely? Why do they act so harmoniously in the things where harmony is valuable, and so independently where independence is good? These actions are not the result of mere accident. Other things in their experiences have doubtless prompted injurious instincts. Among the good events some have happened which were not so good and these have not persisted among them. Sometime fighting has happened, why is that now so infrequent and harmony so frequent.

Briefly these good habits, which arise first as variations of simpler behavior are retained because they prove beneficial; and are then cultivated by use for the same reason; and are made general and permanent by the processes of natural selection; and survival of the fittest whose fitness is in the adoption and use of these beneficial methods. A discussion of beneficial variation of conduct is to be found in special studies, and so will not be undertaken here. At present, however, it is necessary to observe and inquire into that operation of nature by which the beneficial habits of living things are preserved against the interruption of Death. The conduct based upon experience could not continue and become habitual from one generation to another

except for a principle putting these generations into a sort of continuity of life and conduct.

Such a principle is heredity and its general process and function must be appreciated in order to arrive at an understanding of the law of conduct.

CHAPTER VIII

HEREDITY

The fact that in forms of life lower than the human, and lacking conscious perceptions of cause and effect, there exists and operates a system producing moral conduct, yet not dependent upon instructive leadership, nor upon a law given in revelation, invites further inquiry as to the origin of such system. The same source supplies similar inspiration to all grades of life. Doubtless it supplies it with fullest effects in the highest grades, although the clearest view of it is to be found in the lowest, where the causes reveal themselves more directly.

And so again to seek a truth in its simplest phase, knowing that its essence is the same there as elsewhere, let observation recur to the simple gregarious animals which live in amity, instinctively associating in groups, and acting in concert, and rejoining the organized groups when separated, and evidently obeying a sense of obligation in that conduct. Why do they do it? It has been noted that it is a survival of conduct which has been preferred or promoted, by a natural method of selection for fitness. But that is an incomplete explanation. How do the young of a new generation come to perform these beneficial actions. They are endowed with the instinct for them when too young to

have learned wisdom by experiences. Their habits are seen to be established before they have come near to an enemy. It is clearly a qualification received before birth, something given by the parents along with the physical body, in short an inherited instinct; a transmitted knowledge acquired by generations of ancestors and not originated anew by these young but only maintained by their own circumstances. It becomes necessary for this study, that the general law of heredity be considered, and reviewed in a general way. It must be explained, without an extended recital of authority, that a form or habit or ability can be thus passed down from parent to offspring in well developed form. Omitting here the proofs, which are fully given in works accessible to any reader, it is desirable to present a clear conception of this important fact of nature, because it is a fundamental element of the law of conduct. Therefore a few familiar examples may be noted.

Observe the activities of a brood of chickens newly hatched. These little creatures have none of that helpless infancy, during which some other birds and young animals have to learn how to eat, how to walk, and even how to see. The blind kitten and puppy need to learn these things under the parents' tuition, but the chicken we see step from the shell with open eyes, and in a few minutes acquire the ability to balance itself upon a single foot, and to distinguish and pick up food. These abilities may need a stimulus, as of the food, to prompt the function, but the powers are there well formed and transmitted by ancestors, some of whom, in the earlier remote past, first learned how to do these things. The more slowly developing dog, when he

begins to run about, shows at once the watching aptitudes for which his race is admired. The young cat, before it has seen an animal suitable for prey, will crouch and creep in consummate practice of the style of attack of the natural hunter. These things make heredity self evident. We may simply know that the capacities are inherited by these animals, because they do them easily, just in the way that their parents did; while some other creatures cannot do them until laboriously taught.

These examples of heredity illustrate abilities which may fairly be called recent when compared with other powers of such animals. They are quoted first because their newness shows cause and effect nearly connected. It may be noted easily in regard to new habits, that they are evidently used by the new generation for purposes discovered or invented by some ancestor, who lived in the conditions which made them useful. The chicken is a good example of recent variation. It is one of a species of animals which generally has the power of flight, and therefore is able and accustomed to nest in trees, difficult of access to most enemies. But it appears that when certain species of fowls under man's protection nearly lost the power of flight by disuse, and were compelled to nest in places accessible to snakes and rats and such enemies, there was evidently a great disadvantage in the helplessness of slowly maturing nestlings. The sooner they could stand and run the better their chance of survival. In a nest of several fledglings those slow to acquire this strength were often lost and those quickest survived. Now these stronger running birds would produce stronger running offspring because of the simple law of

heredity by which the offspring is patterned after the parent. This law is still a mystery in its workings, but its effects are well known. The effect upon one generation, of weeding out of weaklings as above noted, would perhaps be small, but when the same process is repeated generation after generation that effect accumulates rapidly.

This fact is well known to breeders and fanciers of fowls who are able to take peculiar individuals, such for example as those of a special coloring, and by accumulating the selection through many generations to make it pronounced and fixed. This is easily understood. It is however a little more difficult to comprehend that every form in existence, and every capacity, and every habit of life is originally the result of a building up of such small acquirements. Yet this is the fact and it must be realized. The principle of heredity not only takes care of the transmission of the recently fixed things; but it is the director of the oldest of the old characters. Therefore the constancy in type of the whole bodily structure of any animal is due to heredity. For example, a horse always possesses hoofs, which are practically single-toed feet; it never is found with five-toed feet, with claws like a tiger's. Yet the five-toed form is just as usual in nature. And similarly each part of an animal's equipment, body and limbs or wings, and lungs, or gills, or whatever they may be, are always proper according to the equipment of its ancestry. All this seems to be necessarily so, but that seeming is only because it is constantly so. Why should not horses be born with five-toed feet with claws or with two or five legs? Trees of any species grow with varying number of branches, one with

ten and another with seventeen or more, according to environment. Why does not environment produce in a horse or cow such variability in the matter of legs? It is simply because the mechanism of heredity holds the young to the pattern of the ancestry. It is well known that it is because all the form, and all its attributes, size, shape, material and all others are minutely regulated, controlled and governed by a heredity principle which is marvellously exact. And although we are generally more interested in the vagaries of heredity, that is to say in the transmission of unusual things, it is really in the common repetition of forms and patterns in the constancy of a usual type, that heredity is so wonderful.

Heredity enables a creature to produce offspring patterned after itself, and its recent ancestors, with constancy of type and without loss of any valuable and settled acquisition, and yet enables it to abandon slowly anything which by long disuse has proven certainly useless.

The qualities and abilities acquired under the stimulus of environment are thus secured to the race by the principles of heredity. In humanity and in most of the animal species these effects are distributed and equalized among all the individuals of a species by the action of sexual propagation. Without this a difference or improvement acquired by the variation of one individual would remain in the offspring of that individual and would not affect the offspring of any other. But by the dual origin of character in sex every such variation must be shared in the next generation with some other individual and the two heredities combined, and these again with others so that in ten generations over five

hundred heredities are combined, or to put it another way, each individual alive has received in ten generations of ancestry over five hundred different strains of character, and in twenty generations over five hundred thousand individuals are involved as ancestors; with the evident consequence that many of them must be in some relationship, and that a few centuries serve to disperse any character among a whole race within the geographical limits. Thus while a new ability may be a family property for a short time, it soon becomes a tribal or national or racial one if it is of value to survive. And again a new disability or lack of capacity is soon corrected by the influx to the blood of the corrective surplus of other strains.

It is seen in biology that the qualities and capacities and organs are the result of continued additions and improvements in a cumulative growth under the law of heredity. This fact, when conduct is in question, places the beneficial results in a positive or real group, and harmful or defective results in a negative or deficient group. A good inheritance is mainly a sufficient equipment of tested organs and capacities in actual efficiency, and a bad inheritance is a group in which some such are lacking, or imperfectly endowed. In other words bad inheritance is not usually an endowment of actual positive evil, but rather a partial omission of some things, in an equipment which in the main is good. When we consider how much of good heredity is still perceptible in the person known to be defective, this becomes more clear. The proper working of all the organs of assimilation, locomotion, propagation, etc., the proper form and coloring of all the limbs and features and adornments, the

proper sense perceptions and reasoning powers, may all be present in a bad heredity, which is bad only in a loss of one particular instinct, for which a tiny group of brain cells is responsible. This condition may seem to be an utterly depraved heredity evil, yet the fact is that the correction of that one deficient tiny group of cells, either by growth or by surgical operation, or by reëducation, may be all that is needed to perfect the individual. Millions of inherited qualities in that individual are good, while only one was bad, and that badness is not positive badness but merely insufficiency of active goodness.

Here is where the dual or sexual method of reproduction operates in a process of redistribution which actually realizes the aspirations and hopes of the instincts for union. In biological nature it is actually true that two characters add their good qualities and deduct their bad in the total of reproduction. The deficiency of each creature is nearly always remedied wholly or in part by the equipment in that regard of the other of the opposite sex which is naturally selected by affinity and instinct, and evils are repaired in the next generation if the deficiencies be simple; and if not simple then they are reduced so that a few more generations will eliminate them. For example an excessively timid person will frequently ally with one of courage in the instinct for protection, and the offspring will be more normal. An error of greed or acquisitive instinct is likely to seek and find a complement in an unusually generous nature. A weak reasoning power will worship a strong one. And usually some qualities of great worth will compensate the union for any defect introduced. And so error is often

eliminated and forgiven in the offspring of a natural alliance. And even in those less simple cases where an evil is found to be not merely a deficiency but a perversion or misdirection of some positive capacity to evil action, there is usually a cause in a deficiency in the restraining or governing faculties, which makes it amenable to the same law of cumulative replacement. Many failures in physical and mental processes are now attributed to disturbances in the nutrition; to failure of some organ which ought to remove poisonous waste products, which omission allows toxic substances to affect the nerves or brain or will, much as drugs will affect them. It is easy to see how a defective organ of elimination may be remedied by the addition of a healthy heredity and so seem to overcome a positive evil. Even when the evil capacity is positively transmitted it is found under Mendel's law of heredity to pass to only a limited number of offspring and so to be in course of extinction by natural selection. And it must be remembered that many qualities called evil are merely conventionally and temporarily evil because of man's present customs. Excessive meekness or excessive courage might well be virtues under other circumstances. Such qualities may recur inopportunely in heredity under laws of reversion and variation. Nature is always experimenting under changes of environment, and when changes of environment are frequent and abrupt, nature is called upon for sudden adaptation. Then many reversions are produced. Instincts long dormant may be awakened by the removal of a restraining instinct more recent. Even such an emotion as blinding anger may reappear as a virtue; and may suddenly again meet

an environment of Christianity where it is called a sin. Many so-called errors in heredity are in fact perfectly legitimate and right cultivations under nature's law. The utter disregard of any rights of property except those of possession by force, which is shown by militant savages, is not in them a wrong or bad heredity. It is right in its own environment, and becomes wrong only when the environment changes, and better motives become safe and livable and more beneficial.

The great facts of heredity in regard to conduct are that it is a vehicle of good qualities, and of beneficial habits and organs; and that the transmission of deficiencies is remedied by the union with different natures which are indicated by natural affinity.

CHAPTER IX

ENVIRONMENT AND VARIATION

In observation of animal life it appears that by a process of heredity, the form and structure and physical nature generally, of any creature, is an equipment received from ancestors who have found it advantageous, and therefore have prospered and cultivated it, and transmitted to descendants. The mysterious method of transmission will be further studied in later chapters upon evolution. But it is desirable now to seek for an understanding of how such structure and equipment begin and how they come into being, as matters to be thus tested and appreciated and exercised and transmitted. We have already seen their existence but now it is desirable to know their origin; as the origin and transmission of new phases of conduct is obviously involved, being inseparably connected with the use and exercise of those physical gifts.

We find that all that an animal possesses in the way of bodily structure and equipment, is shaped and patterned after some of its ancestors, with unfailing and amazing accuracy; in its minutest details, such as number of scales, and patterns of coloring, as well as in the greater features and general form. It should be noted that many ancestors, not simply two parents—contribute these influences. Now

we want to understand how these ancestors—the several creatures who showed peculiarities among a uniform general species—came to acquire those characters. To do so let us see how the descendants, the young living now under observation, proceed to acquire new characters. And by character let it be understood that conduct, or way of using a physical structure, may be meant, and discussed, at the same time as the actual physical structure.

The beginning of a new character seems to be usually a novelty which is in biological study called a variation. Just why a variation appears is not evident. It is possible that in the multiplication of former heredities by sexual or other conjugations, the mere physical elements in the chromosomes may develop purely fortuitous novelties, by new combinations of old factors. But a belief more in accord with the known righteousness of nature, is that visible variations are the product of unrecognized pre-existing conditions and causes, which have worked to this result although we do not yet perceive the connection. Or to put that belief into more scientific words it may be surmised that variations are produced by the action of the environment upon previous inheritance. Or it may well be that variation is the rule of nature and uniformity of type the exception, maintained only in uniform environment.

By environment we mean all and every one of the things which make up the world or universe in which the creature lives, or that part of it which affects him.

It is well known that environment, as modified by the conduct of the creature, decides which variations shall be preserved. That is to say, the conduct of a creature in using

its equipment is tested by its success in the midst of the environment, which is usually hostile in greater or less degree. Now the equipment in question is mainly inherited from ancestors who have previously tested it. This is visibly true. But there are also seen in this equipment, from time to time appearing, new things not previously known in ancestral equipment, and however they may have originated they immediately come under the test of use; and if they are useful they are likely to become permanent, by exercise and by cultivation, and by the survival or preferment of those creatures possessed of them.

That they arise in part by chance is not incompatible with our knowledge of nature's methods. We see the instinct of animals exercised in efforts for what must be called chance results. And in fact there are few acts or processes in nature which promise results with absolute certainty. So that to achieve a thing it may become necessary, even with volition to aid, to try experimentally several different acts, and seize for development the one giving greatest opportunity. And much more is experiment usual, when volition does not aid the action.

Consider for example the method of a spider in constructing such a web as we sometimes see bridging a space not accessible to its power of locomotion, as when between bushes on opposite sides of a brook. The animal resting upon the foliage on one side perceives perhaps the general proximity of the support opposite, and throws out a line of its web to be carried by the wind. Now when we see it later definitely attached, and supporting the finished net upon some prominent twig we might suppose that twig to

have been chosen by the spider. But in fact the web carried by the wind could not be directed by choice. The first line perhaps failed, and another was tried, and fell inappropriately, and still another; and at last one caught upon a place which was an opportunity worth seizing. Thus we see three or four efforts for chances tried and only one successful. And so it may properly be in nature's variations of structure. Many may be futile. Yet just as the spider's efforts were all based upon its experienced habit, so may the variations of natural forms be based upon previous things promising probable success, although never certain.

Thus we see that environment offers many promptings, more or less favorable, or more or less hostile and difficult. These impulses stimulate effort, and the creature responds to them, and some of these responses succeed and if often repeated, are permanently adopted. Some of these new forms and new habits become hereditary or are hereditable at once. Therefore, it is evident that the environment of one period affects the previous heredity, and these two factors together, that is old heredity as the main force and new environment as a minor force make the heredity of the next period. So when we discuss heredity and environment, they must not be treated as unrelated forces, but as two parts or stages of natural influence under a common law. A creature at birth, without experience, is a product of heredity chiefly. Environment has done little to him. Heredity still continues after that to affect him in great degree, but from the time his own life begins it is also affected by environment. If this latter is different from that of his ancestors it is likely to change him, or to develop

changes latent in him, but if it is the same, it is likely to confirm him in the same heredity. If life is full of variety, as it is with progressive creatures, environment will probably promote change in structure and habits rapidly, but if life is monotonous and constant to former conditions, the environment will make little new impression.

Now consider these influences as applied to humanity, as to all other creatures, and further consider them as affecting habits and conduct, as well as structure and physique; and the life of the previously studied simple beings will clearly illustrate their results.

Gregarious creatures are observed as habitually profiting by habits of association, which have become so necessary that an individual acting independently is at a disadvantage. He loses his share in the collective wisdom and power of observation. The shoal of young fish has a hundred eyes, and when one eye sees danger the whole shoal profits by the alarm. Similarly when food is near all share in many discoveries. One creature of gregarious kind, cut off from its fellows, with but one tiny intelligence and one small judgment, is so obvious an example of misfortune in any species, that it is a favorite object of sentimental human sympathy. It suffers always, and often it dies. This obedience to the newly acquired gregarious habit is therefore established as good conduct because of its being beneficial; the disregard of the habit is bad conduct because of its being injurious. The benefit and injury are mainly for the individual, although the phase of life observed is gregarious; the consequences to him are great, to the others in mass they are minute and may be of small account, but

still they are important in principle. There is found a power for self-preservation reposing in the aggregation which does not exist in any individual. The abnormal creature which deserts the association does so at his peril; he may die; in fact it can be seen that many do so die; a shoal of a thousand little fish is reduced to a hundred before they complete their first year.

But when the habit is established we have noted that all depend upon it, and by desertion a creature not only does ill for himself; he deprives the association of part of its strength. A variation of conduct appears involving a question of right and wrong in an act formerly free from that question. First independent action appears to be wrong upon the simple test of profitableness. And in consideration of the fact that the privileges of the association were inherited side by side with liability for services to mutual support, it again appears to be wrong in a moral sense. Here then arises the primitive phase of a new conduct called duty, a variation in conduct not arising by chance, but as a logical consequence of previous activity. It takes its place however provisionally. The question under trial is the value to the individual, of a certain support or assistance by others of his kind, which is afforded in mutual relations requiring from him a return support of the aggregation, by his contribution in services. Now the answer to this trial is usually in favor of this variation. In nature the creatures achieving this conduct generally survive by it, and consideration of the greater unit becomes more necessary; and thenceforth the habit is maintained and cultivated, and the earlier death of all who violate it tends

more and more to confirm the conduct as habitual in those who survive.

Obviously a variation of habit is often accompanied by a variation of physical formation, a variant of habit or conduct may precede and cause a corresponding variant of form, or it may follow as a consequence of such a change. For example, a species of fowl finding a new environment, safer and with more abundant food than the old, will neglect and perhaps abandon its old habits of flight. Then in disuse the wings degenerate, and they assume in course of time, by survival of such changes through several generations, a changed hereditary character, while possibly the legs acquire greater strength. This is a change which is perceivable in our own period, and is fully described by observers of the subject, and it is typical of what is constantly occurring and unquestionably always has been prevalent.

In comparison with human conduct the merely expedient habit must be distinguished from the conscious purpose of man's intelligent action, which is a comparatively recent acquisition of humanity; and which produces variation in quite a higher sphere of action, because it is selective and voluntary. The primitive law of experimental benefit, however, still affects man in his lower nature, just as it always did since it first arose in his primitive ancestors, when they lived the life which we now observe in animals of that low grade. The progenitors of mankind before the psychological age were governed and varied and modified by this simpler law of expediency. It is still part of the fundamental law of conduct, and can be observed still effecting change in human physique and human habits by the same processes. The

higher sphere of activity has taken not this place but a higher place, and apparently this is the logical course of progress in the moral law. Yet as we observed in other studies the law of the lower sphere seems to persist and not to be superseded, and the heredity and variation of humanity seem to be related to environment under laws which comprise the lower with the higher.

And so humanity in its wisdom and these creatures in their utter unconsciousness of the law, live alike in individual responsibility for conduct and endure alike the consequences, even death, of error. And it is by this interposition of death that the law is maintained and continued, and the new conduct variation ends if unfit, or becomes habitual and hereditary if fit, and serves to increase the resisting power of the life possessing it.

CHAPTER X

THE FUNCTION OF DEATH

The process of survival of the fittest, illustrates the seemingly cruel methods of nature. It does not seem to agree with human conceptions of justice, but as it persists, and cannot be overlooked, it demands our effort to understand it. Is there a just law governing this method of correction of individual error by summary death, and this achievement of progress (or sometimes perhaps of maintenance) in the powers and functions of the race, by the death sentence of those who fall short in the race achievements?

In the lowly forms of life the extended operation of death as a factor in this plan of development is amazing. Many species of fish have attained to a considerable development of co-operative action and mutual support, and some have well marked individual obligations of an altruistic nature (such for example as clan defense and nest building), yet these instincts do not serve, as they seem to do with many other species, to prevent a prodigal expenditure of life which seems to be waste. While the birds, to insure the perpetuation of their kind habitually guard their nests, and tend their eggs, and teach their young, and so almost entirely prevent loss of life under normal conditions, and raise to an age of efficiency nearly all their offspring (foreshadowing in this the capacities of higher life), the fishes

meet the onslaught of hostile nature, not by resenting it, but by continually increased effort to supply the life demanded. They produce eggs so abundantly that when the greater number is lost in death there are still enough left to stock the waters. In fact this life stream is so lavishly supplied that the suppression of most of it becomes a necessity, for the world could not support all these creatures if they lived. And they achieve in this way the desired result, and their generations succeed one another, and keep the places accustomed to them filled to the normal degree, quite as well as if a lesser number were produced and better preserved. Doubtless there is behind this difference of method, a difference in the impulse of necessity, such as the continuing need in these earlier lower types of a capacity for more rapid adaptation, or for flight, or for more prompt recovery from castastrophic destruction. But an important truth is revealed which is this—That generally the increase of intelligence, and the development of coöperation, tend to make this lavish sacrifice unnecessary, by substituting for it methods of preservation. It is forcibly evident that death thus dealt and ordered is a process quite different from an imposition of a mere penalty or punishment. The view so regarding it is based upon examples which seem plausibly to sustain it but which conceal the true function. Where life is well guarded, death sometimes occurs as a consequence of the failure to sufficiently guard it, and hence it might appear that such a failure is to be suspected as the secondary cause of death, whenever it occurs prematurely. In fact this conception does prevail and its prevalence leads to the erroneous belief that individual life is a natural right, and

that its continuance is pledged or guaranteed to good conduct and to sufficient vigilance. The weakness of this theory is shown in its utter failure in face of catastrophe. Death by accident always, and death by disease often, seems to be injustice of the most tyrannical kind. And yet they occur. A system of ethics in which the function of death is regarded as individual punishment, breaks down when its support is most needed. But when we study the problem in simpler form, we see that death is a means of modification and development of the race life so that it may change as environment changes.

Punishment may cause an earlier instead of a later, conclusion of an already limited activity; that is to say a modification of the time element of the pre-determined life factor. But even premature death is not fundamentally a punishment in the natural system of law. Often it is mere fortuitous happening, a thing belonging to the chaos preceding life. It appears rather that the removal of death from this category of chance and its establishment as an avoidable punishment, is to be the effect of reason and civilization coming into operation when consciousness makes life intelligent. The tendency of humanity is to reduce more and more the liability to premature death. Thus one of the primitive incentives to good conduct acquires greater capacity, and the reduction to a minimum of this liability is an ideal of intelligent civilization. As such the process is the erection of reason's conception of justice to the individual, in opposition to the unreasoning force of the environment.

But evidently the element of uncertainty in the enjoyment

of individual life is one which, however it may be reduced in degree, cannot be eliminated altogether, without ending the scheme of adaptation. In other words, a full guarantee to the individual, of life of full term, is consistent only with a system no longer needing progressive selection but crystallized into inactive perfection; a Nirvana of repose in perfect virtue without change, such as is imagined in idealized unity by certain philosophical argument. But this speculative conception is metaphysical in its extent. It is mentioned here only to show how inconceivable is such an alternative, as compared with a continuance of the prevailing natural law of conduct; when the universal prevalence of continuity, as against terminality, is brought to mind. It may be imagined that death will always be, as now, for the mortal body the simple withdrawal of a privilege granted temporarily and never guaranteed. It is the end of a life, which, for the single individual, whether it lasted a century, or a moment, has been a loan, a gift, to be held and relinquished as circumstances may require; and always as a terminable trust and not as a guaranteed possession. Such a conception of the nature of death is induced by the life history of those species low in the scale of evolution, in which life is so lavish that premature death is inevitable for the great majority. When this primitive aspect is comprehended, it can be applied to the more complex relations of life and conduct in higher grades, and it will be found not only consistent but explanatory of many obscurities. But after eliminating the notion that death is always a process of penal retribution we are still lacking an understanding of its necessity.

What then is the chief function of the death of the individual as seen to occur in man? Is it not still for him as it is for those simple existences in which only elementary conduct prevails, a corrective process freely and lavishly applied to eliminate defects and to develop more perfect forms by survival and preference, and to provide continuously for adaptation to new conditions?

Let us again refer to the previously studied heredity. The life capacity of any individual creature is founded, as we have seen in an inheritance of acquired habits and abilities, and of structure to make these abilities effective. These are of the past. The present individual is a link connecting that past with a future, the life to come of his kind. The individuals of the next generation will be the offspring of some of these present. But which of these present are to be so honored? The answer to that question is nature's award of consequences and compensations. Each of these creatures of inherited capacity is under trial, in its one individual life, with the obvious result of elimination of those least capable. From infancy it progresses toward maturity, and all that progress is a probation, testing its probable fitness to continue its race. The fitness under test is not only that of the individual preserving himself, but of the family and nation and race in part responsible for his preservation. It is not fitness as an egotist imagines it ought to be; it is the fitness which actually does survive. Some survive, and these, which thus prove capacity at least comparatively fit, with other groups similarly tested and reduced, constitute the groups that mature, and which in due course are permitted to produce young having the qualities and tendencies of

these selected parents. Obviously the character of the mass of the maturing generation is changed by the weeding out process. As an aggregate it is not just what it was in its greater numbers at birth. Many have died, because of active error, others simply have failed to maintain their existence under the adversities of circumstances. Some deaths have perhaps happened because of changed conditions for which only a few subjects were by nature fitted. But for whatever reasons, some were lost, and others, the survivors who have succeeded, are obviously in some degree qualified. Now this different qualification, whether it be little or great will continue if its cause continues, and will impress itself by heredity upon the next generated offspring. Usually, but not always, the impress is infinitesimally small in the case of creatures which enjoy circumstances changing slowly, and calling for little change in themselves. Most of the losses by death, in such creatures, must therefore be ascribed to only comparative inferiority, which is not a fault as faults are defined by human codes, but is still failure. It is the kind of failure shown by nine seedlings when a gardener sows ten seeds and leaves only the strongest plant to grow, and plucks out the others to make more room. In nature's process the circumstances are fortuitous instead of being directed, and the preference is less abruptly declared, and the most fit are not always the strongest—nor the richest—nor the greediest. In an age of wealth which encourages unprincipled men and sterile women poverty may be an advantage, and the poor and ignorant may become the most fit and may survive to inherit the earth. The survivors who produce young for the new generation, will be those

whose lives have been maintained by relative successful ability and conduct until maturity was reached. But further than this, beyond mere maturity in many species of animals (and with compensation in others) the creatures which continue life longer, will naturally produce more young than those short lived of the same race, and so the number of progeny will be nicely proportioned to the degree of fitness. Among the young of the creatures distinguished by nature as fit enough to survive, some will be more fit than others, and will live longer. It is obvious that in the beginning some must be endowed better than others, some are the offspring of parents who only just managed to survive with weak and injured structure; while others are of those whose career was prosperously easy. Therefore equality is not found and is not to be expected between these individuals. Even from birth any family or tribe of seemingly similar creatures carries the greatest variety of destinies. There may be an approximate equality in the opportunity and environment, but even that is not absolute, for some creatures are visibly called upon to meet changing conditions which impose a new test of adaptability, while others are not so tried.

In this review of well-known facts there is nothing new. It is quoted to be recognized as a factor of great import in the study of consequences of conduct. It shows that the life action of a creature determines and demonstrates first its ability—not its right—to survive; and next the extent to which its offspring (if any) shall go forth as part of the next generation of its kind. It shows that starting with unequal equipment, some individuals are successful and live to the extreme span, and (other things equal) produce many

young. And others who reach maturity may still fail early and leave scant posterity, and these offspring are tainted with disabilities inherited. Others again fail even sooner and die early and die without offspring. And of these some suffer for error or failure of their own, but many merely end a line of failing life inherited, and almost hopeless chances of retrieval, because of failure by parents, while others from the same parents may be free from such taint. This seemingly complicated operation is not dependent upon consciousness or morality or intelligence. It occurs in lower life just as effectively as in humanity. A fish, because of imperfect energy in the face of adversity, may fail to reach the sheltered waters usually needed for safe spawning and hatching of the eggs. Then it may well be that the young develop badly, and ill nourished; or that they suffer otherwise, while constitutionally they are well fitted to prosper. These endure the consequences of insufficiency or error, which may however be light enough to permit recovery. But suppose that a similar lack of energy be repeated in the next season, or in the next generation, then the ill effects are obviously accumulated, and under such a ban there is serious loss. We see in fact exactly such cases, in all races, including the human, wherein a tribe or group of creatures become fewer in numbers and only the fittest survive. And in some changing circumstances there occurs extreme difficulty where none are able to live and the branch of the race in that place is extinguished. And on the other hand we see in some cases a diminution of numbers under changed environment, followed by a rapid refilling of the vacancies as soon as adaptation supplies a form qualified for the new

conditions. When enemies or accidents or diseases overwhelm a number of individuals with apparent absence of justice, this process will operate more severely upon those less qualified to resist or avoid the attack, and will, in the survivors who escape, increase the average of ability of the race to resist that particular hostility, and therefore will develop the quality which is beneficial—Unavoidably we are compelled to consider the race as well as the individual.

Death appears therefore as the means of giving to a life of unsuccessful effort or of less successful effort a proportionately short term of tenancy and to the successful or more successful effort a proportionately long term or tenancy. Thus death operates for justice, not only in summary fashion but with effect proportionate and corrective. In a broad view it ceases to be regarded as a mere penalty for individual conduct, yet it still stands as a liability. Although the result is to be the elimination of those least fit and preservation of those more fit, the test of fitness being still, as at first revealed, self-maintenance in a surrounding world of conditions more or less hostile, and the reward being still a tenure of life depending upon continued ability to maintain it and transmit it. This privilege to transmit it, is the door to a justice which to one life is apparently not promised. By that door an indefinite extension is offered as the consequence of continued fitness. Death therefore appears to be the necessary precedent to change the means by which life is compensated. By it is seen access to a system of reward for conduct with a just appreciation of varying shades and degrees of goodness. If death did not occur to remove the less fit material structures

there could not be room for the establishment of improvement. In other words there could be no progress in fitness. Therefore when one among the living races of primitive creatures develops or acquires the power to discard its inferior structures by death, it acquires a stupendous advantage over those still clinging to the original immortality which denied them that advantage; and it will be seen in later studies of evolution that this power to reject structure made inferior by age and obsolescence, is a fundamental superiority of the multicellular creature over the primitive unicellular.

Death appears in two distinct forms. Primarily death appears not as the necessary end of life but only as an accident, or as an ending of some of the separate lives when a limited environment becomes inhospitable. And even this kind of death rarely occurs in primitive conditions without a production of spores or seeds or other means of succession, which can await more favorable circumstances.

The great function of death is an adaptation by which life of small organization achieves the possibility of great and elaborate organization, promoting the death principle to a higher sphere and using it for the liberation of life from the structure which is doomed to age and decay beyond repair, so that it, the life, may be endowed anew; and for the removal of structures even before age and decay, when they are of insufficient excellence, as compared with others, in the face of difficult environment. This great function of death further enlarges under the operation of the natural law of survival for fitness, and makes possible more than the renewal of the structure. It opens the way for a continued

improvement of the structure and for its advance in every successive regeneration, to a higher capacity under the continued stimulus of life responding to environment. This conception of the function of death evokes the theory that perfect fitness in an unchanging environment would, if achieved, end the usefulness of death, at the same time that it ended its probability.

The death inflicted by the hostility of nature is not intended to be just or compensatory to the individual, but it is the original cause of stimulus against which all the functions of life are arrayed; and as it cannot be annulled, it is to be met and countered by adaptation, in which justice and compensation are attained or promoted for succeeding generations. The primary death before mentioned applies to higher mortal structures just as it applies to the potentially immortal. The adoption of death as a regular avenue to progress does not annul its original function, but adds to it. Death continues, in late as in early evolution, to remove many individuals of apparently high ability and merit, acting as part of the originally hostile environment. In this environment life itself, by the mere exuberance of increase, produces new conditions of hostility, and progress promises, not a cessation of it, but an increasingly effective resistance to it.

CHAPTER XI

JUSTICE IN DEATH

In the wide range of possibilities made accessible by the instrumentality of death there is such variety of compensation for conduct that a clue appears to guide us to an understanding of nature's justice. It begins to be evident that it is not a justice which recognizes any paramount importance of the mortal individual. If we give up this preconceived idea, and try to perceive the actual working of nature, a new idea emerges which still harmonizes with that human conception of justice which has been found by instinct and reason. This newer idea compels a reformed concept of the object and purpose, to which justice applies. Let us examine this proposition in detail, and to begin let us see how the death which is so regardless of the individual is related to the larger units—to the combinations and successions of individuals.

We see first that as the effects are broken up and distributed, conduct and consequence are better proportioned. They no longer produce a superlative reward on the one hand, and an irrevocable condemnation on the other; alternatives of life and death with no intermediate thing. Time comes into the equation. There is revealed a variable duration of consequence. Life as a lease of privilege contingent upon ability to hold it, is granted to one or to few or to

a greater number as the reward for fitness in different degrees; and a shortened or weakened renewal is held by few or fewer successors, as a consequence of less fitness and ability, yet there always remains, so long as some survive, a possible hope of re-establishment. The reward may be short or indefinitely prolonged and the punishment may be mercifully alleviated and withdrawn. But this view of the consequences of conduct, this appearance of just and equitable proportion takes shape and becomes evident only when several individuals of successive generations are considered at one time, as a unit, in relation to any given act or piece of conduct. It is evident that at the first consideration of things beyond the single life of the single individual; at the first appearance of consequences as a debt to be paid because previously incurred, there appear, involved in the responsibility of the individual, certain others who are or were interested with him, and who did or actually do share with him normal consequences of his acts. And in the varying closeness of this interest the kinfolk, that is to say, the progenitors and the progeny, the former who made him what he is, and the latter who will be what he makes, are in most cases the closest in alliance. These taken together constitute the lineal group which might be called the kinfolk unit of conduct. Now it may well be that this kinfolk unit receives an award of consequences in just proportion to its conduct. There may be needed many generations or few to complete the cycle of award, or it may develop in one. It is a variable unit, this kinfolk, sometimes certain conduct may embrace only two successive generations of individual lives, at other times many more, at times possibly hundreds.

In the midst of this vagueness, however, certain facts arise and stand unavoidable before us. It becomes clear that conduct which is not necessarily compensated in a single life of any one generation, may have consequences in the lives of his progeny. And in extension of the conception it becomes clear that the death which awaits an individual may be very different from that extreme penalty for continued unfitness which involves extermination of the line and its root and branches. The penalty of individual death, when it is a penalty, is after all a light one in comparison with the penalty of tribal or racial extermination, as we see proven in the primitive forms where life and death are so prodigally dispensed. There a group composed of a family of three or four generations involved in the same conduct responsibility, may number thousands, nay hundreds of thousands of individuals, each with his little separate responsibility as well as his share in the unit of coöperation. Suppose, that a lake almost depopulated by accident, by diversion of a water course, or by drought, is soon afterwards again made habitable; and thus affords an exceptional opportunity for the few surviving and enormously prolific fish to increase. A few individuals will produce thousands of offspring and these will next season produce thousands of thousands—all of one great family in almost identical joint interest. Now of what relative gravity to this family unit is the loss of one individual little fish, or of a score, or even of a hundred. Doubtless it is a real loss of some extent; and to that extent it is possibly a penalty; but only a proportionate penalty? And if, on the other hand, the loss is of the abnormal ones, and if the survivors—those more worthy,

establish thereby a fitter character in the race, then what is the loss suffered by this race folk unit?

Evidently this greater unit, if it has suffered loss at all has lost only in proportion to its conduct. And if the loss was in consequence only of the acts of the individuals taken, then the remainder has actually gained in its standard of efficiency. The same principle evidently applies in the affairs of other races, and to situations not so cleared of confusing circumstances, as this specially selected example. Like other fundamental laws, this one can be seen reaching upward through the highest development of life, even to the sphere of humanity, although there it is hidden by a multitude of other factors.

Turn from the life which is not sacred, from the fish that swarm and die in millions, to higher phases of a life which is better valued. Study the intermediate degrees ascending the scale in their greater use of conduct and volition. Consider for example the animals which nurse and care for their young; and so achieve the relief of their race from some of the death losses that the fishes meet. Some of these animals are also surprisingly prolific, notably the defenseless ones, such as rabbits, mice, squirrels, and all the small creatures upon whom larger ones levy toll in the hunt for food. Here may be studied that kind of death which, when called accidental, appears to be unavoidable and of absolutely despotic control. Yet a race of this degree, or even a certain limited number of kin of this race; when considered as a conduct unit, appears to lose some members and preserve others, according to a law which changes the race or kin and makes them more fit to resist the adverse circumstances.

This prolific race, still equipped by nature with powers of rapid reproduction, opposes to such an attack not only its output of offspring, but the higher equipment and education of offspring; and the attack itself has the effect of selection. Those who survive and escape once are those most able to survive and escape again. And the offspring of these who find the way of escape, become the parents of young to whom they transmit some of their ability. Then the shyness, the timidity of such creatures, in which they scamper to cover upon the sight of enemies, which was not original or necessary with them, becomes instinctive even from birth; it is the instinct of a strain or kin, which has been selected by the hunting in which all but the shy were killed.

And selection can develop the very opposite qualities in the same class of animals. For example, the squirrels and birds in the public parks of a kindly people, survive in greater numbers than the natural food would support, because they are fed by human friends, and so creatures of a wild race, which in the forests of the same country a few miles distant, has developed a strain of its most shy members, as the fittest for conditions there; has produced here a group so selected for confidence, that they will walk fearlessly up to a man and beg for favors. Here the shy do not prosper nor get sufficient food, the tame ones thrive because their life is the most fit, while the timid starve. Now we recognize that the development of either or both of these opposite qualities in full degree of usefulness to the race is accomplished by the way of death—and in this function death acts with justice. It is not usually possible to take a mature, shy wild animal, who has lived by fear and tame him even by kindness. There

are, however, some few in the variations of temper natural to animals, which have a small degree of this capacity, and when it proves to be the beneficial kind of conduct, these and their offspring survive, changing the inheritance of habit slowly, little by little, a family slightly tame being slightly encouraged and increased; and another very wild being slowly crowded out by shortened lives and fewer progeny. Here again death is to the individual a consequence of conduct which is unfit for its surroundings, perhaps innocently because the surroundings have changed, yet by nature this lack of fitness is treated in the same way as if it had been the creature which had changed and had become responsibly deficient. The purpose (if such a word may be used, regarding a process like this) is beneficent and just toward the race, as appears in a very few generations. Let it be noted that the severity of the system is lessened in many races subject to vicissitudes, by their having a quicker adaptability, a quality which enables them very rapidly to expand and utilize any particular character in demand, and this process is greatly helped by the short-lived fecundity which such animals enjoy.

Thus there is unfolded another principle, which is this. The death which has an appearance of injustice is working with other things to raise the race out of that injustice. And as we study higher conduct and higher life we find the injustice getting less and less, although even the highest still live under the same law. Consider such wild creatures as deer. They guard and teach their young, and they produce comparatively few. It is not necessary to the race that many should be lost. Yet some are lost. In winter's snows, when

food is scarce and when hunting animals, including man, are hungry for meat, the young, and sometimes the old, die in numbers. Yet we see readily that the death of the weak is likely to happen first, and the survivors will be those best able to continue the race under the same circumstances. So that in this class of animal life is found a proportion of death to population which is lessened by the improvement in conduct, and which is coming distinctly nearer to our conception of an award justly adapted to conduct. There is apparently in the balance of the factors, much more effect due to the growing power to prevent death, and to reduce thereby the need for a production by birth of excessive numbers. There appears, however, a limit to these benefits of prevention, and death is seen to be still a necessary process. If the upward improvement is to go on, there must be a weeding out, so that these left are, in ability, not an average of those born, but a higher selection of them. In this the race meets and provides for new conditions as they appear, and the new conditions always beget competition in ability. The qualities inherited as acquired by ancestors under their circumstances are not specially adapted for the present new circumstances. These must be met by new abilities. They are regarded and developed by the favoring of such variations as prove beneficial, and the rejection of such as have not the beneficial trait. Since these creatures have no power to reason about the future, they must retain the method of experimental trial, and therefore the retention of a habit of variation is necessary.

The deer in a forest vary in regard to their love of locality, some may have a very small range and a great

liking for a particular home mountain or lake, while others are travellers and wander far. Now suppose that the advance of civilization brings men to the neighborhood, and the deer are driven out. Obviously that strain which has been always wandering and has adaptable habits, will now endure the migration more easily, and though all may suffer losses, yet the home depending creatures will lose most. After that again, losses may eradicate the weakness, and thereupon the race will be fitted again for wandering life, or for its new territory, by the selection of the most suitable from among its old numbers, and by the production of many young so that a few may be selected to survive under the new conditions. It is easy to suppose (or even to observe) that such a trial can make a valuable difference in the character of a herd of deer in even a few seasons, and a very considerable change can occur in several generations.

It becomes clear that this eliminating function of death in the meeting of changed environment, by change in the race habits and conduct, cannot be rejected or dispensed with. It is a regular and general function for all life. We have studied it in the lower forms of animal life where it may be regarded with less emotion and with clearer understanding. We see its real value and necessity there less blinded by our instinctive repugnance. The sentiments which have such strong hold upon humanity are based upon those consequences which are more intensely felt, because closer and more specialized, but not because they are the most important consequences. Death of one's own kin is a wound to cause grief, while death of one's neighbors' kin may be considered with a less emotion, and death of far away hu-

man beings of other races causes only a reflection of regret. And so that idea of death which is repugnant in human affairs, becomes less so when brutes are considered, and appears as a commonplace process among very inferior animals. And there is something of an instructive correctness of estimate in this. To those lower creatures which afford our best examples for the study of this subject death means little, they and their parents, their clan, their race, regard with entire apathy their decimating losses; they live their little lives, and it does not matter much how long. A fish who lives seven days and dies, or a fly who lives seven days and dies, simply live and cease to live. What does it matter to the fish that he was only one-thousandth part mature, while the fly was of ripe age.

But higher animals, to whom death matters more, feel the loss instinctively. They mourn, and their feelings are not of empty sentiment, they are the result of perceptible loss; and their mourning is the expression of knowledge of the loss.

And among the higher animals the action of death in modifying the race is much less severe. It does not so frequently operate in the extinction of individual life, except in the earlier years of age. At this period there is still a stern selection, based upon the worth and wisdom of race and family, more than upon those of the creature. Fitness is more the production of cultivation and purpose, and relies less upon accidental variation than before, yet when produced the fitness is variable and much of it is rejected as insufficient—as when resistance to disease is lessened by over luxurious manner of living.

And when human reason assumes control of inferior life

it acts through the same natural method. Animals which are bred and cared for because of their usefulness to man, cattle, horses, dogs, and such like, show the same action of nature under the high guidance of reason. In these cases human intelligence wards off a large part of nature's hostility, supplying food and shelter and protection from enemies, yet in return demanding just as nature does, the maintenance of certain desired hereditary qualities of the stock unimpaired and the improvement of those undesired. And to this end death is the recognized agent. Those having the character preferred are fostered, some good enough are permitted to survive with them, and these alone continue the race, the others are exterminated or allowed to exist for what little time and value they can present in inferior capacity. Nor can this death be called punishment or penalty. Those lives were called into being and permitted because of a certain need for a surplus number from which to select, for use in that way, in proportion to their usefulness. And even the cattle and sheep produced for food, with still smaller prospect of living complete lives—because in their vast numbers only a few are so chosen—even these creatures enjoy a span of life which would not have been at all, except for that destiny which ends it. They were not of their own making, with a right to a life of old age, nor were even of their clan's making, with a right to nature's allotment of a span of life. What number of sheep would enjoy life in this land, if men ceased to eat mutton, or to clothe themselves with wool? They would have had no existence at all but for man and his need of them. To man they were indebted for the opportunity to live a short life. And between a short life or none

at all, between short life or non-being, it can only be supposed that their greater happiness is in life. But beyond this mere brief enjoyment of a short life, they fulfilled a greater mission, even the rejected ones. The clan or family was put into possession of selected sires and dams not of chance quality, but the pick of all this great number. Had the selection been made by nature, in preferring those best for a wild life, the process would have been essentially the same as that instituted by man, preferring those suited to a tame life. Man is thus seen after all as only part of the hostile environment of nature as regarded by these individuals. His action in disregard of animal life and death does only a fragment of what nature does, in her normal development of all creatures, as man is a fragment indeed of nature.

And observe the appearance of the larger conduct unit, the race life of the stock, which, responding to this environment, flows exuberantly to supply the demand, accepting the offer of great numbers of short lives as readily as in other cases the offer of small number of longer lives.

In the case of those creatures desired not for food but for special qualifications, as the horse for speed, or the dog for hunting capacity, the rejection of a few in the earlier generations serves to establish the many that follow in a fitness which gives them immunity. The race loses a few members to exterminate an undesirable strain or quality; if these had survived their progeny would have diluted the quality of the stock even more than their numbers strengthened it; and man would no longer foster them as a race. After their rejection every birth to the stock becomes valuable. Clearly the removal of those members was not a loss to the race but a gain.

And as man impresses the brutes with his standards raised alongside those of nature, so he impresses his own kind. In fact humanity is, toward individual man part of the environment; a fraction of surrounding nature, just as it is toward the brutes and just as it was toward the lowest life. These are unaware of the interference, while man sees environment modified, in kinship, and humanity, and moral obligation, and perceives its meaning in part, although still in a very small part.

The function of death as a way of removal of less suitable creatures, and as a means of making room for others, is not however, recklessly used by nature. When a race, whether of humanity or of brutes, has achieved a fair occupation of a certain place; and when opportunity and conditions remain substantially settled, and free from liability to great destruction by enemies or accidents, there seems to be a general tendency to avoid this lavish expense of reproductive effort. It seems to be endured as long as it affords escape from evils; but it is not practised as of any virtue in itself.

Some creatures enjoy safety or partial safety; while others of the same race suffer terrific drain upon their populations, inflicted by predatory animals, or by parasites, or by diseases. These favored creatures are enabled or allowed to maintain their numbers in proper relation to their space and food supply, without any such expenditure or sacrifice. As soon as their increase fills the territory and their life becomes equal to the opportunity, then reproduction is discouraged and lessened and a balance of population is reached with a lesser output, proportioned to the lesser opportunity. At the

same time the individual life period lengthens in the greater security, and this further reduces the need for new births. Then it appears that the individuals most fit to survive and dominate the conduct in this favoring environment, will be not selected by vigilance in accident, or by fleetness of flight, but by suitability to these new conditions of peaceful crowding, in which an aptitude for life in common unity will count for most. The lineage most favorable for survival will not be the most prolific, when the race against destruction has been superseded by a contest in self-improvement. Then the family will prevail which produces the best equipped members, rather than the greatest number. The strength of a lineage may be expressed as the power of the individual multiplied by the number of individuals. The most prolific family may fail to establish a single one in normal security; while one transmitting life to smaller numbers may secure for every one of them survival and advanced ability; and the strength of this group may thus be greater. The smaller numbers of progeny of the higher animals is thus seen to be not a failing of nature in the less virile condition. It is a demonstration of promotion to a higher conduct in higher conditions, which come into controlling importance, although the lower influences still have effect in lessened importance.

The process of elimination among crowded populations may be, and in fact is, more severe upon the lineage most prolific, and the achievement, as expressed in the sum of lives established, and in their terms, and values in worthiness; may be and in fact is, less than is reached by those families which obey the natural promptings when numbers are suf-

ficient, and seek the preservation of lineage by superiority of quality, and not by merely numerical strength.

Then the adaptation to closer association, by cultivation of its peculiar methods of coöperative life, will enable a continued increase, by reducing the evils of crowding and developing its benefits.

Thus association begins to appear as a constructive force, while the mere competition by numbers for survival of the fittest, is a form of destructive contest.

It is evident therefore that although failure in the primitive contest for racial improvement by an abundant increase and severe selection from that increase, is a weakness in face of the greater vitality of other races, and will entail consequences toward extinction in the comparison when primitive conditions govern, yet there is a limit of value in this method. This limit appears when outer hostility becomes less important than the crowded condition which destroys opportunity. Then nature lessens the demand for productiveness and imposes a demand for progress in quality.

The superiority of man to the rest of creation does not remove or exempt man from the operation of these processes by which all nature is ruled. On the contrary, for him it adds to these a great number of higher demands and ordinances. As will appear from mature study, the addition of the altruistic motive, and those of conscious reasoning, to the impulses of conduct in man, still further impels him to avoid needless sacrifices to death, and urges upon him more than upon other animals, a preference for that phase of life which seeks to maintain itself by organization in mutual support, rather than that resting upon competition for sur-

vival. This higher conduct arises under the old law of natural survival, but man enjoys a perception of its value and effect as well as the intrinsic reward.

Still man's fitness in life is measured by results and not by ideas. In achieving results he has to reckon not only with humanity but, with the universe at large, and his conduct is directed toward all things, to be valued in due proportion to its effect. Therefore, the artificiality of conditions, although it may soften them, does not exempt any of them from consideration, and man's civilization does not lift him out of the old liabilities, nor does the quality, good or bad, false or true, of another man's interference justify his disregard of that. Man remains subject, as all animal life, to that same liability to apparent injustice to the individual. Not exemption, but only an understanding of it, and contest with it, is found in the perception of the multiple conduct unit. The raising of the unit from the size of an individual to that of an association of kin, or race, any number of people or of generations, variable according to the conduct in question, does not end the question. The question in nature, in regard to social man, as to the rest of life, the question always recurring is, which lives are best among all these, in suitability to time and place; but the answer of the race entrusted to the individual, is not of his own being and time solely, the answer demanded of him is partly stated already when that existence is first entrusted to his keeping by his ancestors, and it is only a little further stated when he in turn transmits it to his posterity. So that we see responding, not the one individual but a line of life which is temporarily represented in his person, and in others of his kin.

We may deduce from these observations certain laws. There seems to be in active operation in nature a clear and regular beneficial effect in the selection, by actual life test, of a required number of lives from a greater number, always more creatures than are needed to survive. The death of the individual in old age at the end of a normal period of life, with offspring inheriting his abilities, permits of the use of an elaborated body structure without enslavement to that structure; but with possibility of renewal of it with normal progress in favoring conditions. And the death of a number of individuals before maturity, permits a utilization of the variations which are experimental forms of body structure, and the preference of those most fit to survive enables the race to meet what may be termed abnormal conditions. When the struggle for existence, and for continuation of species, proceeds actively with only the primitive phases of instinct in operation, then those most successful in maintaining themselves in adverse circumstances, are those most lavish of life and death. It seems that a habit of production of many more than the normal loss by age, is the primitive provision for abundant variation, to be used in overcoming adversities and establishing new types to resist them.

But conduct variation is needed, not only to change the racial qualities to meet new adversities, but to establish such new habits as may be made more profitable than the old; and to accomplish changes in the race which, in the same environment, may adapt it to higher ways of living. The higher mode of life may be instinctive as in animals and unconscious; or it may be reasoned as in mankind, and may be self imposed and idealistic. It remains true, however, that

in the imperfection of the reasoning of humanity, there is continued though lessening need of the methods of experiment and survival; and therefore of selection by premature death. All progress is change and much progress means much change. In the need for much change there is need of much selection, and therefore of much rejection; while in conditions less disturbed there is less variation, less selection, and therefore less rejection in failure and death, and consequently less change and progress.

The chief effect of humanity's intelligent foresight upon this general law is that there will be more of selective purpose in conduct, and less of blind experiment. There will be less of a wasteful exuberance of life, and less of the corrective premature death after birth, which balances the exuberance in experimental conduct. This difference is visible in human selection. Each individual surviving because of fit qualities transmits them to descendants whose kin strength is measured by this quality, as well as by numbers; and this strength is reached and declared more by constructive than by destructive process.

The fitness of a family or race measured by the prosperity of its succession, in highly civilized life, is not always found to be greatest where offspring are most numerous. It is obvious first that reduction by mortality is heaviest where reproduction is most prolific and that it is the number surviving to fruitful maturity which counts rather than the number born. And of those surviving it is the strength of well educated, well trained and organizable units that counts for power; rather than the mere numerical strength of discordant and socially useless individuals. An aptitude for

social co-operation comes to be worth more than brute strength of the individual. It is not in reliance upon mere experimental fecundity that humanity properly progresses, but in appreciation of a higher kind of life which shall necessitate less of the correction by death. In the sterility of those not deserving successors or not suited for the sacrifice of parenthood, there is a more humane eradication of them and their deficiency than in rebirth and premature death: and in the gradual displacement of self-indulgent races and strains and families, by others which have the natural impulses and affections, there is a more inevitable governance, than in the superseding migration and conquest; by which countries are repeopled in the processes of conscious aggressive survival.

The efforts of humanity to resist and oppose death, and the instinctive abhorrence of it by man and by the emotional animals seem to be founded in a power to overcome it. Although under the natural law of experimental variation, primitive race life takes advantage of the opportunity given by death, for a selection of individuals, promoting the fittest, yet instinctive altruism and reasoning wisdom continually operate to enable higher life to foresee weakness instead of awaiting its development, and to alleviate or prevent its existence instead of exterminating it. This is where the morality of intelligent human nature differs from the morality of unreasoning brute nature.

In the course of the growth of human love and wisdom there arises an ideal of repugnance to death which is the instinctive outcome of activity against death. Reasoned conduct is forever cultivating foresight, and avoiding death by

a right selection of conduct, and thus is continually lessening the need of correction by death. And simultaneously the reasoning power is so increasing the knowledge of environment and the power to organize in specialized co-operation against it, that the ability to cope with the hostility comes not only to a few, surviving out of a number, but it belongs to all, even to the weakest, and by altruistic perception is extending even to the visibly deficient. It becomes clear that unity of purpose with qualified strength is for humanity more important than greater strength without unity. And man, with increasing perception, becomes aware of the racial unity and sees that for him, as for all life, the injustice of death as one of the hostilities of nature appears to operate against the individual only. Death is not only just but is beneficial in regard to the race. When a conduct unit of several individuals such as a family or race is considered there occurs no such injustice. From this we must infer, that it is for such a unit that nature's process operates, and we must believe that our view of the prime importance of the individual is wrong. There are many other evidences that such is indeed the case.

On the other hand it may be argued that the effect of humanity and of human reason is to gradually acquire for the individual that degree of justice which at first belongs only to the race. The visible result of that progress, in which reason overcomes environment, is to extend immunity to the weak, and to save them by the strength of the strong, and instead of exterminating them for weakness, to produce the desired variation and progress by selective conduct in foresight. This is a recognition of a cumulative principle

in nature, in which advance is more by constructive than by destructive processes.

Under this impulse we see the question of due compensation of conduct, and especially the awards of life and death in that compensation; pointing to groups and associations of persons rather than to individuals. The better understanding of this new higher conduct unit must be attempted.

CHAPTER XII

THE CONDUCT UNIT

THE study of the consequences of conduct has led to the belief that the justice of these consequences appears only when a number of individuals are considered in their joint responsibility for them.

If this belief is well founded, and if there is a unit chargeable for certain activities and the results, it is evident that for each different activity of civilized mankind there must be a different unit of conduct, comprising those jointly engaged in it. It is clear that in the complexity of modern life there is no possibility of ultimately analyzing and valuing such co-operative conduct. But we may form a general idea of its nature and of the composition and co-operation of some of the natural groups of persons.

The most obvious alliance in responsibility is that of parent and children and children's children. Parents and children evidently stand in joint concern as to the conduct of either; and the consequences of the parent's conduct, whether good or bad, will fall not only upon the parent but upon the child for many years of childhood. Efforts to alleviate this law fail to obliterate it. The child is dependent. Until maturity the separate responsibility of the child can hardly be said to appear. There is some responsibility of

course, in proportion to independence of action, but even that is not separate, the consequences of it will be shared by the parent. When a child suffers sickness or injury, even as a result of its own act, the parent suffers, not merely mental or sympathetic suffering, as when a neighbor is injured, but actual physical loss. The death of a child is a real loss, harder than the loss of a hand or a foot or a limb, it is a loss of so much flesh and blood that lately lived and was part of the parent. This material relation is made more clear as the machinery of evolution is studied. It is part of the foundation of the joint responsibility of parent and child. Now when does that joint responsibility cease? For how long are parent and offspring linked in conduct? When do they become independent? If the parents' responsibility ceases at some time, such as at the child's maturity, or at the parents' senility or death, does not even then the child's responsibility continue the same line of activities with the account still unbalanced? In other words, is not each individual answerable indefinitely, for things done by his parents and ancestors, even after they are gone? Visibly and positively he is. If a parent should evade duties, the consequence of that evasion falls upon the offspring. Every man and woman, every animal alive, stands alive by virtue of the success of a line of ancestors; and enjoys what he has of life, strength, stature, beauty, health, reason, wisdom, and all of it; by their deeds, as qualified by their misdeeds and omissions, which lessen the benefits transmitted. But even if he has but a minimum of these things; only enough to be barely alive; he is indebted for that, and is responsible for it, until in turn he relinquishes it and some of his descent

take up the trust. Now with this point of view, individual responsibility becomes a different thing. It affects a compounded being of the individual and offspring. And the copartnership is an organization of which the members cannot stand alone. It permits of separate or lone action, at times it compels it, but at all times benefits and burdens are to be met, which were not of that creature's separate making, and at all times his acts are originating benefits and burdens which he will not meet, but which his offspring will. And this relationship evidently extends indefinitely into all the life of humanity and perhaps even beyond. As brothers and cousins are related so in lesser degree are all others concerned in conduct, so that the remote relationship which we know exists to unite a nation, is just as remotely binding them in consequences of conduct. But we must not think this supersedes responsibility. In any particular action or class of actions there is an inner and outer circle, a single creature or group for whom the action is taken, and all the rest of the world on the other side. It is still the individual in the derivative sense of the word, in comparison with the rest of creation, but now it becomes evident that most frequently that indivisible unit consists of an allied group instead of a single being: this group being small for some affairs and large for others. The smallest group is that in which individual action is qualified only by the inclusion of such family as the individual belongs to. He may be interested entirely alone, he may be with parents and grandparents, or with children and grandchildren, or one with all of these, the normal man will inevitably be linked with both past and future to some degree and for some time. Thus the

conduct unit, in its normal form appears as the group of related individuals indebted to the past and to the future; holding in trust the successful issue of generations of proven life, operating it for a limited period under their own volition, and passing it, with their own conduct's additions, to new generations present and to come. This then is the conduct unit which death chastises, and yet raises up, which adversity strengthens by developing resistance which turns tyranny to justice by compensations, and which makes true the seeming contradictions of nature.

This conduct unit as thus perceived lives two lives, its individual life in each creature, which each or any one controls, and which it may end; and its race life, which does not end until all its members fail, each and every one, and which therefore no one controls but only influences, for although this offshoot or that may prove bad, or may yield to error, or fail under adversity, yet a sturdy growth of a sound branch may grow into the place not only with restored effect, but normally with improved effect.

Instinctive knowledge of the inseparable nature of the lives in the direct line from parents to offspring, is visible in all the habits of and customs recognized in the laws of people of every degree of civilization. If there should be needed any justification for occasional human forgetfulness of this joint responsibility, it might be made in the fact that it is so strongly asserted in nature that man can do nothing by intellect to increase its force. It is more probable that intellectual reason fails utterly when in comparison with this instinct. It would seem that there is error in the theory that all men are born equal; and another in the mistaken charity

which asserts that the sins of the fathers are not upon the heads of the children. It is true that altruism may modify the consequences to others of a man's individual acts yet it is clear that any benefit or loss must in secondary ways affect his successors. It may appear that an individual can evade in his own life consequences not desired, by action which throws them into the future. He cannot thus escape nature's law, but is in fact, putting it into operation.

CHAPTER XIII

COMPENSATIONS

Let us now consider the application of these perceptions of nature's attitude toward a compound unit of human conduct. Under this system of compensations let us study a supposed family, a family of only average natural advantages. Let this group be imagined as consisting of parents, one or two children of these parents, and grandparents, of the direct line and previous generation; and as connections one or two other adult persons, who are brothers or sisters to these parents. This is a small family, enjoying little of the advantage in the large clan support which favors some others who have many ramifications and alliances. It must be recollected first that the present position in the world of this little group of persons is chiefly due to their ancestors. Do they show in their comparatively small numbers a lesser power for mutual assistance, and a greater liability to serious percentage of loss in accident or epidemic than larger clans do? It is evident that a loss of, say, three individuals in a great catastrophe would be more disastrous to a clan of eight persons than it would be to a clan of forty. On the other hand there are some offsetting advantages possible in a compact affectionate alliance of a few highly qualified persons which a larger clan may miss and in some environment this smaller number may better develop all the opportunity.

But what it is first necessary to note is not the quantity or profitableness of this situation, but its actual reality and its effect. The fact that here is a family with only a few adults in the active generation is a fact to begin with which they did not and do not control. It was settled and remains settled by the lives of ancestors, in conduct of which the living share many consequences good and bad. And in these consequences there is a general approximate compensation. Possibly conditions have compelled or suggested this small number. They may have passed through vicissitudes, such as epidemic disease, and thus it may be that the small family is a selection of survivors who enjoy a compensating immunity gained in that way; and represent a conquest over environment.

Another possibility is that in some national or clan stress or in some crisis demanding altruistic sacrifice, this family has lost members for the good of the nation. In that case compensation is much more remote and complicated. It may be partly made in gain of nobility of character and be recognized by public appreciation. But its chief value must be sought in the extended conduct unit of national size. Then the sacrifice appears as a race payment for the benefits which have been received in advance, in several generations of security of life for which, and for future continuance, a periodic payment is needed.

Thus the conduct unit, as a product of the past, is found in possession of qualities which, under certain circumstances, are a compensating and growing credit; and it is a matter of common knowledge that such circumstances and consequences do really occur abundantly.

But it is possible that the parents and forefathers of this small conduct unit gave it that numerical weakness without just cause. Possibly these people long enjoyed affluence and opportunity and simply yielded to the temptations of indolence and luxury and neglected natural duties and instincts, showing a lack of ambition and force, and losing hold of the world by mere inactivity.

But such possibilities need not be exhaustively examined. It suffices to show that obviously the elements of the visible situation of this group of persons, their numbers, their prosperity or their poverty, are not the only things to consider. Equally important factors are their history and their tendency. What they are is not to be learned by an examination of them and their environment. There is needed an inspection of the facts that led to their present position and all of these factors go to determine what will be the impress they will make upon their circumstances.

It is common knowledge that families do for several generations show continuous tendencies, purposes and policies, and whether magnanimous, constructive, idealistic, productive or destructive, virtuous or criminal, or what not, these qualities do tend to reappear in succeeding offspring; the transmission may pass over certain generations to reappear later.

The main fact pointed by this study is that the family in its equipment of constitution, temperament, character and education, as well as in its physical numbers and quality and fortune, is largely what the forefathers, in their contest with their surroundings, have made it. That is its new starting point, although the time and place of such a start have no

definition, and may not be absolutely clear. From this undefined point it proceeds to use the equipment, adding to it as it goes. Now observe how the conduct in question, that which uses and adds to the heredity, is normally the work of several individuals combined in community of purpose. And observe too how in that purpose the different members of the association bring different qualities which extend the ability of the whole. The grandparents we may suppose still aid by the counsel of their greater experience although they are no longer in control. The younger parents in the prime of energetic action, with children of their own, are normally the managers. The children with emotional inexperience, and with almost helpless dependence, still supply unconsciously the incentives to moral altruism. Such a family in possession of good health and intelligence and with active, prosperous surroundings in a civilized progressive country, is an association of specialized abilities which benefits each one of its members. Together they possess and earn more than their physical needs, and they therefore are accumulating more or less surplus. Care and anxiety are not demanded; nature is seen to be very tolerant of mistakes conscientiously made. But for errors deliberately chosen, in defiance of conscience and of instinct and reason, the consequences can be seen to fall upon the unit including their lineal descendants in approximately just measure. If for dissipation's sake they neglect to educate their children, then they may secure passing pleasure; but these children, part of their living conduct unit of their own flesh and blood, will suffer. If by neglect, for indolence sake, the health of the children is lowered, then they may gain ease, but their

next generation will endure the bad consequences. If for selfish motives they evade the labors and sacrifices of bearing children, then even more will their posterity suffer. For worse than inheriting a deteriorated life it will be cut off from life entirely.

But in the normal life, growing in strength and health, they become rich and yet remain natural, and then these advantages and possibilities pass on to the younger ones, who receive increased power together with the wisdom needed for its use.

If with wealth they cultivate conscience and wisdom, then that wealth is worth much to their young, while if riches are transmitted without moral strength they are a curse and a burden. In any case it becomes clear that there is in this visible process of compensation, an indication of a systematic law which study of the individual life does not reveal. In this system the life of today stands responsible in a joint accountability of many persons, but it is still liable, and is inevitably continuing an old account of responsibility. In short the present generation impresses the lineage, the conduct unit, by its conduct, just as previous generations formed it for transmission to them. And in the wider relations of humanity, conduct shows similar causes and effects; it is clear that innumerable generations and unnumbered relations are involved in the compensations just as are the four or five here in view. And it may also be considered as an evident truth that the further this law is traced the more these effects will be found to be established in a compensatory justice.

CHAPTER XIV

TIME AND CONSEQUENCE

THERE are many deficiences in the human constitution as well as many virtues which are founded in ancestral acts or habits established very long ago. Some are of times more remote than the development of intellect; things of physical structure which persist because under the general law of persistence they are estimated to be more valuable than would be the readier variation under a less conservative law. The science of evolution shows that much of the animal character of the simpler phases of conduct, which reveals a common source of motive with animal life, exists also in bodily structure; and a relationship is preserved or only partly abandoned, which may be resumed upon occasion for the preservation of existence. It is (for example), part of known experience that when compelled, either by individual mishap, or by tribal reversion, to descend again to savage habits, men of civilization may soon resume more primitive aspect and development. The cultivated taste for cooked food, the nervous regard for details, even the acquired conceptions of the higher authority in conduct, are quickly dropped for the then more useful, although less advanced, animal ideals. The savage and the animal persist in the present individual. This persistence of consequences of

conduct of a thousand years ago, shows that a thousand generations bear upon his present responsibility. And looking forward there are in his present life sacrifices to conceptions of future demands which may be dawning ideals, or may be only personal prejudices; but which are equally gifts to the future; and to balance them more or less, there are possibly drafts anticipating the future, by which his conduct may reap too hasty profit to-day, such as that in which men of a civilization too rapid and trustful, may in temporary success, forget the assaults of barbarism, until their sons are found defenseless. In all these things there is an extension again and again backward, and again forward, so that in the deepest, greatest matters, the time involved is extended indefinitely, just as in previous discussion the number of individuals concerned was found to be extended indefinitely; and all work rests upon a basis lost from view in the depths of the unknown past and aims at a goal invisible in the remotest future.

Beside the lapse of time evidently necessitated to work out conpensation for great matters, there is a less evident long deferred compensation for trivial things of which the influence is so slight that only cumulative effect is perceptible. Yet it is clear that however small the consequences, they are not lost.

There are therefore many acts of which the due consequences or compensation cannot be expected until after many ages; and many acts are to be considered as persisting results consequent upon the conduct of preceding ages. So that there is always a proportion of conduct and activity of which there is no visible need or which may be without

visible compensation. Necessarily then the search for a visible compensation for every act must be given up. It is sufficient if the things which are apparent, establish a principle of compensation, and if this principle in turn convinces by its steadfastness. Then we may fairly infer that beyond the limit of memory and foresight the same law prevails.

This extension of the chain of causes and effects of conduct backward and forward indefinitely, is therefore not a figure of speech or a romance of idealism. Even though it comes to the door of the infinite and questions the future in eternity, it is dealing with realities. The inferences, deductions and consequent action, are based upon actual deeds in the natural law. And in this short review of them it is the previous experience of facts which is appealed to. The question is not whether certain things are well known or unknown; it is what do known things mean and whither do they lead. And the answer is to be found in observations of things as they are, and as we know them although with knowledge admittedly imperfect.

These examples are chosen because they are real. They are common experiences. There is no question of the truth of these possible occurrences. These few demonstrate before our eyes that conduct produces consequences which fall upon many generations at once, and upon many successive generations in time, but more than that they go far to show that this distribution of compensations is, by direct effect, and by deferred effect, finally made up in complete proportion to the worth of the conduct. If there is in the direct effect an imperfect justice, it is perfected in the deferred effects. If there is in conduct a little error, there will follow a

little evil effect. If the errors are great the effects are great in proportion. If the conduct is successful it produces profit, and if more successful, more profit, or of longer continuance, so it is not for the present to definitely state what is beneficial or good conduct and what bad; it can only be decided by results which are often too remote to be visible. The general definition of good conduct, as that which produces benefit, is enough to become the text for an inquiry whether there is a law or system by which such conduct can be studied, and especially whether such a system contains anything to confirm the instinctive separation of conduct into two kinds, one kind impelled by a lower volition of selfish character, and the other by a higher impulse founded in morality.

Already it appears that such a compensating system has in it the potency of automatic operation. Its provisions are carried out and its laws enforced without new external impulse or control, that is to say without the need of any paternal supervision, or of the intervention of any higher authority to maintain the course of Nature as originally impelled.

There is also becoming apparent the inevitableness of these consequences. There can be no evasion. There is strictly no penalty. The consequences are not punishments; they are rewards in less or greater values. Inactivity simply encounters inconsequence and nothing; and nothingness is the end; while any sufficient degree of activity secures its corresponding extent of advantage, and thus it continues with all possibilities.

It becomes evident that as was premised goodness and badness of conduct are relative terms; the badness is simply

a deficiency or negation or absence of good in accomplished fact. Purpose is only an activity preparatory to other chief activity, and, so, as conduct, it is in a subordinate grade to that of achievement. All conduct will purpose the achievement of a certain desired effect; and the desire, if sane and successful, will be for, and will achieve, a beneficial effect in some part; although there may be another part of the consequences which is bad but undesired, and which is perpetrated, and its effects incurred, in order to reach the chief aim. Now this undesired part taken alone might be seen as injurious and therefore as bad; and yet it may in the volition of the actor be justified by the net value of the result. Therefore good conduct may evidently be compounded of its positive or plus goodness, and a negative or minus quantity, to be deducted therefrom. And to further confuse the issue, it appears possible to foresee only imperfectly the consequences of any act, and the extent of such foresight differs in different invididuals, so there are many acts doubtful in value, and often there is no possibility of deciding absolutely whether a doubtful act is good or bad. The consequences will decide and award compensation accordingly, but even this award will not be definitely ascertainable or perceptible. It may be argued with some advantage that all sanely conceived conduct which succeeds is to that degree good, and that its goodness is proportionate to the wisdom of its successful purpose; and that badness of conduct is found in unsuccessful action; and that evil only exists as the action of unbalanced volition or insanity. It is well to realize that in the natural final test fitness, and success in the ultimate achievement of benefit are the only standards, and

these must vary as often as conditions vary. This does not mean that any action will be necessarily good because it succeeds in its prime purpose. Far from that, such conduct as selfishness, by provoking opposition, or by alienating friendships, may cause losses far exceeding the gains and thus giving net results by which the conduct is quickly known to be bad. In this test of fitness, its consideration for a conventional code may apply, and make conduct fit or unfit, even when that code is imperfect or in error; for provided the law therein stated is effectivly enforced, it is evident that such a code is one of the things to be counted with along with the other elements of environment. The fitness or goodness or justifiability which any certain action might have, if codes did not exist, is a hypothetical quality. Truly fit conduct takes account of all circumstances, and will adjust itself to the effective value of a disputed law or custom, much as it would govern itself in contact with the opposition of nature. If the code is clearly wrong then principle and conscience may under some circumstances demand opposition, but opposition is not right conduct if not productive. It is not a duty to resist when that course is impotent and self-destructive; the opposition called for even against error is effective opposition, which perhaps can only be accomplished by deference for a time to superior force. Then on the other hand there is always the possibility that the challenged code is in the main right, or that being wrong, it is still less wrong and more acceptable than the alternative offered in opposition; or it may be that the conservative habit of the majority maintaining the code, has a right to delay even a reform which would be equally right.

If any code or law is effective under liberal institutions of government or of social custom, there is presumption that it is right, not always as representing an unalterable truth, but simply as representing the consensus of opinion of its expediency. A code of conduct demands respect at all times, as the expression of the generally accepted opinion, toward which any individual owes deference and refuses it at his peril.

There is serious responsibility attaching to the individual whose egotism sets him in a minority opposition to the desires of his fellows, and who even if supported by some hypothetical right, is certainly committing the primitive error of disrespect, a fault which nature reproves in man as in the very lowest creatures.

From these considerations it appears that while the natural law of conduct cannot be codified, it will yet operate by any code, in its due value, as part, with other things, of the environment; and there is nothing in their evanescence to prevent codes being valuable as provisional instruments. On the contrary they are necessary as the stipulations by which a member may know his duty in a community, and they are even more needed when the higher organization of human beings seek to act in harmony according to the wisdom of the wisest. But the rightness of a code or law does not arise in the fact that it is uttered by authority. No thing is right merely because it is commanded by a teacher, nor is any act wrong because a teacher or law giver has forbidden it. If it is right it is because it is beneficial to the doer or his associates. If it is wrong it is because it is harmful to the doer or his associates. The lawmaker only puts into

words certain facts which he has discovered or learned by investigation, which will be beneficial to the people he thus leads. He merely voices the facts of nature; he does not dictate or make them. And if he assumes to command, it is because he feels that his confidence will help his fellows. When Moses uttered the ten commandments to the Israelites from Mount Sinai it was his purpose to induce them to do what he knew was good for them and their race. The commandments were right because they would have that good effect and not simply because they were uttered as coming from God. That they were so uttered was because that was the customary method of appeal to the people of a patriarchal age. To them any statement or law which was not supported by divine or patriarchal authority was not likely to have attention. Just as boys in a school would refuse to study subjects suggested by any others than their regular masters, so these tribal people would respect only the advice which came from their known authorities. And who shall say that the wisdom of Moses was not a gift from God as it appeared to these simple and ignorant people. To-day reason and fact behind a law are employed to argue its worthiness, because our people are a reasoning and fact-loving people; but a law which is not based upon the workings of nature will not stand the test of experience, whether it be promulgated by a modern legislature or by a patriarchal Moses. The laws which do stand are not made by these authorities, they are merely voiced by them. In the morality of nature they are right only when they are beneficial to the people who obey them.

Laws which are promulgated by persons in power with-

out the true rightness of beneficial effect, soon become obsolete, as witness the dictatorial laws of the reign of terror in France, and conversely any laws or rules of conduct which have been accepted and respected by many generations of mankind must surely have behind them the forces of nature with her rewards and penalties. To deny these established rules is to refuse to heed warnings of danger.

It is evident that the rightness of conduct depends upon time and place, as well as upon any intrinsic value and personal circumstances; so that even when certain action has been found and declared to be right, a change in any of the factors, time, place or circumstance, may disturb its rightness; and this fact operates to lessen the value of any so called absolute standards of good and bad conduct, and to reduce the status of any such fixed standard, to that of an approved convention or code. And just as the value of an individual conduct varies in accord with environment, so the value of aspiring motive varies, and the moral ideas change in rightness or wrongness. Conscience and practice therefore demand that justice shall be qualified by mercy, which is humanity's concession of the variable righteousness of absolute truth. Truth is the vehicle of knowledge, but when knowledge is responsibility and suffering, there may be as much injury done by truth as by the imposition of physical pain; and on the other hand a suspension of this severity may be as righteous and altruistic a deed as the assumption of a material burden. These are self-evident facts by which action may be tested, for a realization of its need of timeliness.

Time thus appears, not only as a factor for producing

the justice not immediately evident, but as a continual producer of new consequences, and new perceptions of them, which prevents any present age from being self-sufficient.

A contemplation of this never ceasing evolution tempts the mind into the field of speculative philosophy; but restraining it to a hold upon knowable things, there is still enough within reach to tax the capacity of the human intellect. In fact it may be safely assumed as an ultimate reason against fixity in the standards of conduct, that the due conception of the subject will always tax the intellect to the utmost; because of its infinite nature; as opposed to the still finite although always extending, powers of the human mind. The limit of knowledge then is not in the philosophy of conduct, but in the smallness of quantity and quality of it which humanity is able to perceive and understand. The argument of any such philosophy can not profess to see the end, but only to ascertain the direction, or tendency, of results which are infinite in their possibilities. The perception of the remote and complex effects which is the knowledge of morality, must, by its own nature, be ever enlarging.

CHAPTER XV

UNITY OF LIFE

THE many facts which have been cited and studied show that the primary desire for self preservation, to which the will and freedom minister, is itself an impulse sufficient to evolve a law of conduct with the distinct consequences, for good conduct, of continued efficient life; and for defective conduct a life force reduced but continuing, if deserved, until the reserve or credit is exhausted. Thus appears in natural morality the definition of good conduct as that which continues life. And it has been seen that the life thus referred to is not only the limited individual life but the greater unit which includes this, that is the lineal or race life which is potentially limitless and undying.

The conduct unit, in an extended sense of the words, meaning more than one person included in consequences, is a conception essential to an understanding. The absence of a word by which this conception can be named is proof that it is an unfamiliar and unusual one, and the stress generally laid upon the responsibility of the individual originating action, is more in accord with the customary view than is this latter argument. The physical constitution of this larger conduct unit as it appears in the life of nature must be examined to see if its attitude in conduct is understandable. Such an examination reveals not merely a justi-

fiable working hypothesis but a simple comprehensible fact. Physiological science reveals the individual in exactly the complex form which a study of conduct appears to indicate. The science of the evolution of species and varieties of animal life, leads from questions of detail, back to primary laws, and to fundamental nature. This science reveals in convincing evidence, visible at any time, the way in which nature works to produce the physical forms of life, and it is found to be the same way in which the details of conduct are compensated and minute advantages of fitness rewarded. The continuation or extinction of the life term is the way in which for all past ages evolution has advanced material life to higher physical forms, while the compensation for conduct has proceeded. Acts and consequences accumulating in error or in right, which may exterminate life or extend it now, operate under a law which always was. Ever since life began there has been the same continued rewarding of the fittest by the lease of life. But this reward was not bestowed upon creatures who merely suffered it. These promoted to the higher grades were not passively but actively fit. As we see now, they became and continue fit by changes of activity which suited their environment of conditions and circumstances, as well as by persistence in things they inherited which continued to be beneficial. The changes are proven to have occurred, both in the circumstances and the creatures, not only by inference from their present condition of progress; but by the positive geological records of fossilized life covering countless ages. Knowledge of this continual change comes down from all times, and in all ways, to show it to be perpetual.

And it is also shown to be enormous in accomplishment. Life structures, such as shells, have been counted one by one into new islands and mountains, while atoms and cells have been marshalled into new hordes of life and new organisms. Natural conditions have slowly altered from tropical to polar and from affluent to arid while, step by step, living things have altered their habits and forms, and changed to meet the new demands. Animals living on land have become specialized to live in the sea, and those of the sea to live on dry earth. And always these things have been done in additions of minute successes, in the continued effort to become more fit, and most fit, to survive. The chief thing needed in the average mental conception to comprehend this story is a true appreciation of time. It is merely a matter of arithmetic to show that a mountain could be built of so many million grains of sand, and there is no difficulty in the belief that one grain of sand could come to the place in question every day, but there is a reluctance to believe that so many million days could have passed while the mountain grew in that slow manner. Yet all philosophers of all ages agree in attributing to the first cause of things, infinite ages of time, in which days and epochs and eons, are as almost equal quantities. Now modern sciences show these ages as realities still proceeding, today being one of them equally potent with any day gone by, when things we now know were being created. It is necessary to imagine the possibility, and then to recognize the fact, that time has passed, in measures so vast, that no process of change which we see to occur, can be limited in extent or in effects. Its nature may be bounded and all its

evolutions controlled by immutable laws, but within those laws any extent of alteration is possible and is always possible, and change may be, and often is repeated, until the original form is lost.

This great principle, if recognized, leads easily to the belief in the unity of life. It becomes clear that life in any form may have become the source of life in any other form, and that is to say in all other forms. And the utter absence of life except as derived from previous life, leads to the inevitable conclusion that all life is from one old source, or origin, whether now continuing or closed. The wonderful uniformity of constitution and structures of all life must be held to prove until refuted, that all terrestrial life is related by deriviation from an original form. What that original form was or is does not matter here. The mystery which enshrouds it is no greater for the human mind than would be any cause which could be put antecedent to it. Even the question whether a cause continues, and whether in form and places beyond human ken the marvel of life's beginning is a daily fact; or whether having once appeared in single materialization, this rests as a feat accomplished; this is outside of the present argument. It seems more in harmony with nature's laws as known, to suppose that what has happened once may under similar conditions happen again, and there is nothing in such a supposition repugnant, but it is not necessary. The supposition that the beginning of life was a creative fiat, proceeding from a preceding cause, would make equally acceptable the belief that all thus proceeds from a single source of infinite possibilities.

What is essential to this study is the certain fact that even

if there is continued origin of life, that origin is in a primitive form similar to the previous primitive forms, and all higher life is evolved from primitive form of similar origin whether old or new. Now the forms most primitive in our knowledge and understanding are still marvellously complex. The older view of these, as being without structure or specialization, is untenable now; for even a single cell, the unit of organization of this life matter, develops internal and external differences and aptitudes which must mean divisibility into simpler form, and these simpler forms of life, even if not the lowest possible, are low enough to explain the phenomena of conduct. In them life action as the primary conduct appears stripped of nearly all its complexities. The power of high development by evolution which must be supposed to exist potentially in them, is yet dormant; either because they are new or because the conditions under which they have lived, have continued always, as in the beginning, constant enough to call for no change. This view is favored by the fact that such life appears chiefly in places and circumstances which might well be so constant, and may well have been just as now through all the geological ages known to man. But whether these are survivals or new evolutions, there they are, the creatures whose substance contains the germ of potential life which all the life of the world illustrates in repetition of the same process. These primary creatures grow, and as they become larger than normal, a portion of their substance separates and becomes another distinct individual, the original continuing then as two; and so this goes on indefinitely unless interrupted by abnormal circumstances. These creatures

do not die as a necessary eventuality. Of course if conditions become insupportable they are killed, changes of natural environment may bring them more or less of food or of heat or light, or may introduce some new element, and they may perish; or they may show the earliest phase of adaptation and thus develop new varieties. But, their circumstances normally continuing, they continue to live indefinitely, and death has in that state of affairs no function and does not appear. It is under such changeless circumstances that we now find them. They are as we see them today the same creatures that lived at the dawn of life. They are the dawn of life able to live to all eternity.

CHAPTER XVI

POTENTIAL IMMORTALITY

The modern science of biology shows all life including the human to be the product of evolution of the undying protoplasmic cell.

The organized life which, by the process of evolution developed out of the fundamental living cell, still maintains, as in the innermost fountain of its being, the same growing and subdividing, never ending substance of life; not merely a principle or spirit or hypothetic ego, but a self-increasing living substance, in a cell organization which does not die, except when some of it is killed by adverse conditions. The better part of it in fact is not killed, but lives from century to century and age to age, and all that now lives has so lived from the beginning.

Human beings, in common with other creatures with specialized organs, those of digestion and locomotion, and of other faculties, appear to have acquired these as results of cultivation of aptitudes, which may have been experimental at first. It is the part of the science of evolution to explain these things to show that these organs were developed in variation, selection and survival. But it is to be emphasized in the study of conduct that the persisting ego of the creature, the master plasm and its offshoot germ-

plasm, still demonstrates by observable fact the continuity of undying life. It is as if this egoplasm merely clothed and armed itself with added organs and limbs and structures; with their functions, abilities and desires; putting them on for its better maintenance, and casting them off when they are old and worn out, and making new ones so that it enjoys perpetual youth. Indeed this expression, seemingly romantic, is the best description findable of the very fact. In all animals this life plasm is the ego; the essence of being, and the essential of reproduction. Whether the process be complicated by sex or not, the germplasm growing and subdividing, and growing still, issues from the old physical structure from time to time, carrying only the smallest fractional abstract or fragment of its hereditary structure needed for the new start or the change; and proceeds to build by its inherited powers, a similar structure for itself; new and young and oftentimes better than the old. In some forms of life the issue of the germ from the old body is the end of the use of that old body; the parts of the divided cells which remain being abandoned at once with the deserted structure, as we see in many plants, and some animals, when reproduction is the final and exhausting effort of the individual life of the somatic body. But in the life where reproduction is frequent, and in those forms in which it is sexual, there is the same continuity of life; although the undying substance, the germplasm, continues its life partly in the parent body and partly in that of the offspring; there is the same discarding of the old structure and making of a new. The new maybe is begun and is built to a nearly complete condition within the old, as is the mammalian offspring

within the parent; and the parent structure so abandoned by part of the germplasm, continues active and effective for a long time afterward. The grand natural truth visible to the eye of science is that the ego substance does not die, but puts out branch after branch, each one a portion of itself, and of its continuous life power and substance.

This descent of the undying germplasm is irrespective of the principle of sex; that is to say it occurs whether reproduction is sexual or asexual. In the lowest phases of life there are many examples of reproduction without sex. The function of sex is secondary. It is a later acquisition, serving to combine in descent the germplasm of two strains with the result of finally combining many strains, so that any desirable qualities shall be distributed throughout the race. The effects thus attained are in the study of conduct of amazing importance, but they do not change the principle of the continuity of life. The sexual descent of the germplasm may be briefly described as the uniting of two half cells recently divided, one half cell from each parent combining their inherited substances and qualities to make a new cell, which then from its new unity proceeds to subdivide itself again and again to develop the new structure for the ego. This ego will surround and equip itself with the bodily flesh, bones, organs and skin, made by inherited ability in the form and pattern of the ancestry of two parents instead of one. It still remains the undying ego.

Now it becomes comprehensible how and why the conduct unit includes more than one creature. This line of germplasm issuing from a parent and making alliance with another, passes into its independent life and activity, but

is always the same ego of the same substance with the parents. And when the parent in the normal course of nature emits and establishes several offspring, they are each actual severed portions of the same life plasm, a part of which remains in the older creature; and when this older structure is killed, or, being worn out, dies, the part of that life lost in it is insignificant; the greater part, the strength of it, has gone out, and, in anticipation of the coming failure, it has established itself in the present organism of new generation, in other numerous structures new and young, so that when death may eventually come, it shall be too late to destroy.

Thus human life is potentially immortal. It continues indefinitely so long as the individuals to whom it descends manifest sufficient ability and knowledge to withstand the difficulties of the outside world, and to transmit the trust to natural successors. The failure to thus transmit it is not only the end of an individual life, it is the end of a line of continuous life which began in the remote past where history and legend, and even knowledge had not begun. Normal death in old age, or even death in adversity or accident, of a life leaving issue, is but a process of nature for beneficial ends; but death without issue is the extinction of that line; and is usually a consequence of failure or error, exterminating at once that particular error, and the creature who committed it.

Here are in material natural history the two different lives, and the two different deaths, which the study of conduct showed as the subjects and objects of motives and consequences: the life of the individual which is merely a tenancy of destructible material, and the lineal life which is

potentially immortal, which passes from one structure to others, and involves all in the same interests, responsibilities and consequences; and which ends only in those lines penalized in comparative inefficiency. And death also stands revealed in dual form, the first being merely the final subsidence of a worn-out machine already abandoned by the life plasm, and the other being annihilation of the race life itself.

The facts thus discovered in lowest life are found (when once comprehended) to be the same in all life even to the highest forms. The discussion of them is the discussion of a universal law of potential immortality. The value of this potential immortality of the Greater Life can be understood only if it be thus traced backward through its history. The view forward of its future is only a possibility, a thing which may or may not be, a speculation, but backward is the fact accomplished, unalterable and undoubtable. This life in the man who stands deciding what he will do with it, came to him through a series of ancestors, no one of whom failed in all the ages from the beginning. It is a commonplace honor, for every creature alive has the same antiquity of origin, but it is nevertheless stupendous. Not one forbear failed. Some succeeded better than others, and some doubtless nearly lost the hold on life. Through them one by one, each in turn responsible, the stream has descended, at times flowing strong in prosperity, at others running low in the shadow of destruction, through ages and ages flowing forward, budding, breaking into new lines, into new forms, arising from, and surrounded by extinct types and wrecked structures; with error and failure to this side and that, this line has come down to this age carrying

the life trust thus far to each one of us who live. All this is certain fact. And of those to come who are not yet in being, of them this at least can be said that all such as do come will be of parts of these same ancient lines which are being now selected from us here; selected for fitness by their now operating, responsible acts, to triumph in this real immortality.

At this moment, as at all others, the commonplace action of every creature conscious or unconscious, is registering in its natural consequences its title to continue life, or its failure, and loss of that heritage from millions of successful ancestors.

CHAPTER XVII

LIFE'S VALUE AND AIM

INVESTIGATION thus discovers a further explanation of conduct in the revelation of a physical relationship among all individuals of a race in proportion to their community of descent.

Conduct is now seen as an evolution beginning in the simple form of sole isolated responsibility of a single celled creature, responding to irritation, or other stimulus, without volition. In the outset of this simplicity conduct may affect only the one creature in question, but as the descendants in evolution from this individual extend their relations according to their growing powers and motives, so their conduct extends in its complexity of the motives of many creatures in concert, and extends too in its complex effects upon many in concern.

And so when we attempt to review the extent of the causes of human conduct, and to discover the extent of its effects, we find ourselves in communication with all the rest of nature in an interdependence inseparable. And thus we learn and see that this dependence is not only of activity, but the activity itself parallels the physical constitution and its history, whose complexity it truly reflects.

This history, now so complex, is found to be the continuing story of a life ruled in a unity of principle, and con-

tinuing without break in a series of changes normally ascending the scale of progress without dying, and using death only as a means of rejecting inferiorities and renewing successes.

This potential immortality is so far thus revealed as a material reward or achievement, by long continued labor, which, stretching far into the ages, may yet not seem to inspire life with any nobility worthy to be considered in comparison with the struggle.

In the mind contemplating itself to the exclusion of others, the question arises which has often come up before. Is it worth while? Is this life of struggle worth living? To this there are in nature many answers. The first is that for the place of every individual whose courage fails because he thinks life is undesirable, there are a hundred aspirants who are ready because they think it is desirable, and a thousand unborn seeking room. This is not nature's threat from authority any more than it is an invitation to suicide. It is a calm self-statement of an elementary law. The right to live is earned by fitness; and willingness is the first element of fitness. For the faint-hearted there is in nature always oblivion without condemnation and without recourse.

This is the answer of matter to the materialist. It is the same answer which nature makes to life without mind. It throws the question back upon the intellect which framed it. Such a question does not occur until intellect and consciousness of self overcome the older dispensation.

It is to be observed that it is not the unconscious or the poor, or the weak, or the hardly used, who ask this question of life's worth. These are always brave. They have

courage fresh from trials which they have survived. It is the spoiled, the over-favored and self-loving, those to whom the world has been so kind that they imagine themselves entitled to continued and increasing support. These are they who do not value life, and who are fortunate if they are to be only tried and disciplined by adversity. For in adversity a cure will be discovered.

Answers assuring the value of life are the purpose and foundation of morality, which in declaring the value of conduct must declare also the relations of conduct to life. Such a declaration may present itself to an individual in a multitude of ways, but the form desired by the intellect which asks the question, is found by the way of continued reasoning search in that morality of nature, which shows itself as the normal fulfillment of natural law. The future which cannot be foreseen may be inferred from the certainties of the past. The intellect and aspirations of man as he now exists, have been evolved from primitive life under a law of compensation for conduct, and that law may be trusted to continue to operate, and to evolve a future for man correspondingly elevated, even sublime, beyond his present power to understand or criticize; and a knowledge of such a possibility and a faith in his ability for its achievement, may inspire his efforts.

This is the phase of the study of conduct, especially human, as distinguished from that which is common to all animal life. The self-investigating, self-conscious race stands apart from all the rest in its reasoning knowledge of good and evil and its aspirations and idealization, and in its power to study in advance the way and the goal. There

may be emotional perception and instinctive regard for morality in unintellectual life without self-perception; a morality of love and faith, which persists, and is in no wise lowered, by understanding. But that knowledge of good and evil which constitutes human morality is a conscious foreknowledge and purpose, while the emotional affection for good is an unconscious surviving affinity.

The intellectual morality must build upon this without superseding it—must explain it and in such explanation enlarge it. The function of morality is the perception of the value of conduct in its remote effects, and any true growth must extend or clarify it. There can be no growth achieved in a lessening or narrowing of perception. Therefore the search in reason for an understanding of conduct must not be destructive of previous instinctive perception, but constructive in its own wider field. Renewed effort must be made to follow these inquiries into the sphere of that greater life, where those relations of dual nature may be further comprehended. Life must be viewed as not only the function of an individual creature, but in great part the function of a phase of being which inspires several individuals at once with a community of interest.

BOOK II

Morality of the Dual Life

CHAPTER I

CO-OPERATION INSTINCTIVE

THE moral conduct of intelligent humanity refers to life in a dual aspect—to two phases of life so distinct that in some cases they seem to make opposite demands.

The individual life—the personal self—demands its own preservation and gratification, while something outside of it, something belonging to remote time and to wider horizons, requires service even to the sacrifice of the individual desires—and this greater demand is the natural impulse which, when it is conscious, we call morality; its voice is conscience and its purpose is immortality. It is in fact the race life, the life of offspring and kin and posterity, of which the individual is only a small part, acting for the larger entity as a soldier acts for the army to which he belongs, risking his individual existence in enterprises by which, when successful, the larger unit will benefit, and so benefit all its surviving members and affiliations.

The previous studies of the conduct of humanity, and of the lower life which leads up to the human, resulted in the clear perception of a general scheme or system in nature by which all activity produces consequences in due proportion and with a promise of justice. It was seen that man's position in the scheme is not a separate or fundamental re-

sponsibility, but one which differs from that of simpler life only in the enjoyment of the highest and newest phases, of a system of development which continues. It appeared that the chief visible effects of conduct are the success or the failure of its purpose to maintain the life exercising it. In the course of this exercise, or practice, experiences and abilities and habits are added to the knowledge of the creature, and transmitted as attributes of its material substance, by heredity, to be enjoyed or endured by offspring. This continuation of consequences is seen to be indefinite in duration. The material substance so transmitted does not die, but continues to grow and add experiences, with potential immortality. In this, and in the simultaneous growth of conduct, the increase of complexity accompanies a community of interest in consequences, among many individuals. The lineage in direct line of descent, and the family, and tribe, and the race, are each seen as units of activity in higher conduct, sharing its responsibilities. The mind is thus led to an examination of this higher conduct, and of the greater life unit in whose interest it operates; and to a study of the relations between this greater undying unit, and the mortal individual, exercising separate discretion and will.

The material benefit and reward for fit and proper conduct, which is a continued lease of existence, with potential immortality is, evidently an essential privilege of all life; and is enjoyed by humanity in common with the brutes, and even the plants of the field. The law governing this continuing process is automatic and self-sustaining and operates entirely independent of any knowledge or consciousness on the part of the creatures governed.

But when humanity in evolution achieved conscious introspection, and began to acquire the knowledge of good and evil, there arose a difference of motive, which is seen to be as radical as was the first dawn of will, or the earliest unconscious concession to altruism. In the history of humanity it almost appears that this new difference has been construed to mean even more than it should, and has been allowed to lead man to an assumption that he not only possessed higher knowledge and laws, but also enjoyed immunity from those lower and older. This was not really the case. Here again comes, with the new mandate, the need for a repetition of the injunction that the new is added to the old and does not supplant it.

Let us inquire what is the first effect of self-consciousness. In what way does the introspection of man's mind by which he differs from the brute, first lead him into a human career. Is it at once a full perception of good and its worth, and a wholesome knowledge that evil is deadly? Far from this there is to be seen only a small and gradual growth of the appreciation of good, and with it a persistence of wrong doing, and consequent death, which is amazing. The effect of this knowledge of evil, and foreknowledge of death, upon the conduct of humanity is at first only partial and surprisingly small. We may see in barbarous races a stoic disregard of death which is little different from the absolute ignorance of it shown by the lower animals. Then little by little there appears in some people a cultivated belief in a hereafter as a compensation for suffering, which may be an intuitive perception or may be intellectual wisdom. This offers to the individual life an added value in an aspiration

to something better than mortal circumstance permits, and seeks to counterbalance the evil instead of removing it. It is difficult to know which laws of nature are prevailing, when in this erratic conduct of partly civilized man, dawning reason thus intervenes, and instinct fails. There is however one great law perceptibly triumphant in the chaos, and that is the law of collective responsibility. Nature is seen compensating the acts of associated conduct by consequences visited upon the aggregate. In this the conduct unit, which in earlier study we observed enlarged to cover families and kinsfolk, is seen further extended. While the individual still strives with others, and the lineal kin-life or clan struggles with others of its like, yet in other acts all are bound together, and are jointly responsible, as a tribe, in comparison with other tribes. And barbaric tribal conduct, such as a destructive sacrifice of life, brings its retribution as well as compensations to the tribe, and thus penalizes the actors as well as the victims.

It required many thousand generations of human reason in barbaric form to raise it to humanity, but this long continued endurance of barbaric habit did not prove it to be finally beneficial. In comparison with similarly primitive conduct, it may show relative fitness, but this suggests only a comparative benefit subject to correction. When we see that later civilization finds barbaric conduct repulsive, and see that in later codes and standards, early customs are superseded, we may be assured that progress and advancement are due to the later perceptions, and that the earlier were successful only because they were not then tested in comparison with the better. This may explain why the con-

sciousness of life and fear of death were not potent factors in the conduct of uncivilized man, and did not become so even in his early civilization, until his elevation to a higher intellect had been accomplished by another impulse which we call morality. In the search for a historical beginning of this impulse many sources are discovered. The early manifestation was like other growths, the result of many variations in responsiveness. In some individuals there was abrupt and startling revelation of wisdom and cultivation of it. The education of the lower intelligence by the higher, as by a prophet inspired, characterized the new growth. Prophetic wisdom, however, does not reveal the source of the impulse; it only illustrates its workings. It is the operation of the impulse in the productive stage, to organize humanity for co-operation. The beginning of the wisdom there demonstrated, is to be sought farther back. It is in fact shown by history to begin in those very faults which first nullify the advantages of consciousness. The establishment, in barbaric humanity, of the tribal unit was at first unconscious, and the conduct was experimental, each association or tribe maintaining itself, or destroying itself, according to its conduct among other tribes. In fact this was but the continuation of the same principles of conduct variation, and survival of the fittest, which we saw in individual life, and the application of them to the larger units of organized individuals. The survival of some of these units, proven to be comparatively the best by the fact that they survive, appears clearly based upon the old law, without much modification by a foreknowledge of consequences. There were many variations of aggressive conduct with rudimentary perception of a

higher quality, before the distinctly best mode of action was pointed out by increasing frequency of its survival. The chief element of value to determine this survival seems to be capacity for association, the same natural impulse seen long before among some animals, but in man advanced to a higher degree. And the distinguishing characteristic of this advancement in humanity appears to be conscious altruism. The ability to organize in largest units, and to establish communities of greatest power, is developed not by the selfish method of destroying rivals, but by the constructive method of increasing the acting unit of force. While the aggressive races cultivate strength by destroying the weak, and so promote those who can best destroy their fellows, the gregarious prefer those who will tolerate others, even in weakness, and promote those who can effect the most organization for the common good. And so of human kind the bloodthirsty tribe proceeds with its development in the way of self-destruction, and the gentle tribe by its way of multiplying preservation, each in its own sphere. It is not necessary that they should come into collision to make the comparison effective, yet if collision occurs the organization of the pacific unit does generally prevail against the disruptive impulses of the other. Nor is it necessary that there should be any knowledge or conscious selection in the conduct. Nature awards her compensations for deeds and not for intentions. The actions prompted by unreflecting instinct are, when right, equally effective with those reasoned by intellect; in fact we may often suspect as ancient philosophy did, that they are even more moral and acceptable, because of their seat in mere unreasoned faith.

Thus we find that in different places at the same time, or in different times at the same place, there may arise two or more races which are under trial to survive or to disappear, without knowledge of the test, or of one another. They will respond in accord with the instincts of the creatures and the conditions of their environment.

And generally the survivors are the pacific and organizing races, which grow rapidly to superior strength in comparison with the destructive and aggressive races, whose growth is necessarily slower. It is evident that barbaric conduct has its greatest value for humanity in the primitive struggle of the few against the many, in the fight for life of man in small families or clans against nature alive and armed. In these circumstances every man to survive must be a fighter, and, like the carnivora, he will behave even to his fellowman, in that way which is compelled by his manner of living. He stands suspicious and aloof. But he will associate with his own blood whom he can trust and so achieve in numbers new strength for survival. For him the practice of altruism beyond his kin and offspring is dangerous, and distrust is safety, yet altruism is kept alive in the instinctive care of family, which it must be noted induces the sacrifice of self in even carnivorous beasts. Man endures this life of aggression when it is imposed by environment. But he instinctively tempers it by so much of association as proves beneficial, and evidently any success attained by this way of living, which shows itself in growth of his tribe, will impel him and his successors to accept more and more the restraints, and to adopt more and more the strengthening ideals of co-operation.

The early response of such human beings (when it is unconscious) must evidently be based upon inherited impulses since the same conditions visibly permit different responses, and since the lack of conscious selection of reasoning, which is so noticeable in the activities of primitive men, shuts out any appreciating consideration of the future. When we see savages of one tribe respecting one another, so as to permit the cultivation of land, and the production of destructible crops and stock, while another tribe in the same continent procures these properties only by raids, and holds them only by force, while their environment is practically the same, then we must attribute their respective ways of life to instinctive impulse, which can only be so persistent in them by reason of heredity. This control is equally indicated for the harmonizing impulse, and for the aggressive. The search for the beginning of these opposing impulses carries us back from man to animal life, and in that to lowest forms, below any possible intellectual origin, and equally clearly below any religious inspiration. Down in the most elementary relations of simplest life we find harmony without aggression and learn that this high virtue is not to be found as a product of humanity or as an invention of humanity's new-found wisdom. It is only the appreciation of it which is new and distinctly human, and able to place it with affinity to the divine aspiration. The co-operative motive has its roots in the lowest problems of life. It does not matter whether this lowliness is observed in the life today raising from genesis, or the life recorded for our reading by which our own development was reached. It was and is the same for both. Although the world is changed by the higher

creatures in their own perceptions, yet to the primitive animal of this day which these higher ones ignore, the world might be in the Palæozoic stage. The student is forced to the conviction that if humanity and all the highest evolutions of life were swept away in cataclysm, these lowly trustees of vitality would not only resume, but continue the march upward, and do over again what was done before, with only such differences as environment might entail.

CHAPTER II

ALTRUISM FUNDAMENTAL

THE cohesion of humanity in the larger conduct units organized for co-operation in industry and in government and social activities, depend upon a spirit of mutual trust and support which is in fact the elemental form of altruism. This is not a new impulse, however, it is the reassertion of the original unity of life. In nature, life does not appear simply as the possession of a privileged individual,—that is its lesser aspect. The greater is seen as a property of an undying ego forever broadening into a race-stream of many in community. This community is a consequence of the fundamental unity of life descending from a common origin; and altruistic organization is its self-expression, and morality is the due regard for the interests of this greater life. The grandest idealized altruism is not a creation of humanity and of the intellect nor a special revelation to man. It is a cultivation or development in nobler form of a thing which began in the beginning and which is shared by all living creation. The aspect of it which is distinctly human is the later conscious knowledge of its moral function and value, a knowledge which is reached by inductive reasoning, and consequently can only appear after the evolution of mind. The contrast between altruism and aggression arises in the contest of primitive life against life, for survival by greater fitness, when a limited environment is occupied by two crea-

tures compelled by it to contend for the superiority which is not possible for both. At its inception the aggression of one life which destroys the other, is compared with the tolerance of two others in which both survive in harmony. The two systems of conduct thus contrasted differ in their unit of activity, but each seeks self-preservation and both are self serving fundamentally. But the thing we are seeking, the principle of altruistic association, is evidently already beginning in the life which fills an environment to crowding before any contest is necessary. It would appear that the altruistic motive is a natural and original enlargement of the unit of the selfish fundamental motive, and that the aggressive impulse is the secondary or subsequent motive. The simple tolerant phase of altruistic conduct is the collective activity normal to living creatures of any fixed type, and of equal and similar development, in an environment of abundance; and the aggressively selfish motive is only later imposed by circumstances generating differences and enforcing rivalry, and is not adopted until those circumstances arise, and then is assumed only provisionally with a sustained tendency to return to altruistic methods whenever liberal environment makes it possible, and to limit and reduce the competition always to the degree unavoidable. Life thus seems to begin in ideal innocence and to end in ideal perfection. It is consistent with the known facts relating to the upward tendency of evolution, as well as with the conception of a compensating justice, proceeding to establish final rightness, by the law of conduct. It is not repugnant to humanity to trace back to such a source a principle by which wrong or evil appear to be simply the negation, or absence, or defi-

ciency, of a first method of the prime impulse, which is right. This is the general theory which was indicated by a survey of practical conduct, and it again appears in response to the philosophical question.

The physiological facts too are in accord. The earliest individual life in the form of a living cell, which in favorable and unchanging conditions grows and subdivides and becomes two similar cells, does not thereby evoke any antagonism or competition between them. They are, when newly formed, of the same matter, in the same quality and quantity, as when they were one. The growth reached is a consequence of favorable circumstances which existed before, and which still continue. The mutual interest which one-half has with the other, the moment before division, is unaltered so long as circumstances are unaltered. Whatever benefits one, will also benefit the other, and the two thrive at least as equally as if they had remained united. And the early developments of life in these lower orders show that when differences do result from environment, so that union gives advantage, there arises a process of reuniting of these separated individuals, which is direct and positive evidence of the continuing mutual interest. This is the process of conjugation by which two single-celled creatures combine, not in an act of destructive absorption, by one of the other, but in the preservation of the qualities and characters of both.

The earliest conduct may well be of such co-operative character as to promote the interests of a race producing it. An attitude in which the circulation and absorption of the nutriment-bearing water is secured without obstruction to

others, is one of the simplest forms of activity and volition. Thus the prosperity of a growing colony in this beneficial arrangement would surpass that of a colony not using it. Such advantage would be stereotyped in the joint use of the newly acquired power of secretion of structure making material. The corals exemplify this process. In this lowly life there is a considerable development of function. There is social alliance evolved to distinct system. And yet there is between the members of this colony no such rivalry as in later forms appears to be indispensable. But mere association in equality of function does not develop altruism; it prepares the way for it. There is the possibility of different degrees of benefit in the different situation of individuals in the colony. And already, as in the case of the corals, the use of structures needing renewal and permitting of growth only by superposing new upon old, has made necessary the individual death. Circumstances have arrived in which rivalry might have developed. Each individual might have established itself in an effort to prevent the use of its structure as a foundation for others of later time, and so might have enjoyed a longer period of individual life. This habit is in fact discoverable in some other creatures. But these in review, accept an individual life with a term of predestined brevity, for the sake of the higher growth it affords to the race. They have abandoned the potential immortality of the individual, for the privilege of renewal and growth of the structure; and in that structure they abandon the uninhabitable parts, by a transfer of the life germ continually upward to the new, maintaining thus the potential immortality of the lineage. There is a possibility of rivalry be-

tween colonies in their greater or less profit of more or less favorable conditions, but this is passive not aggressive active rivalry. So far as the elementary activities are concerned each individual is bound into the community. The identity of interest is as complete as in the two prospective halves of the ripening protozoon before division, and more so than those halves after division. Any injury to or death of an individual of this colony is an injury to all neighbors, just as any injury to or death of a limb of a tree is an injury to the tree. The whole resources of the organization so far as they are available are concerned in preventing or repairing such injury. In brief an evolution is visible in which the prime altruistic principle is potent, and the advancement of self at the expense of others is still undeveloped.

But the argument will suggest itself that every growth upward of a new individual upon an old in this colony is a raising of self at the expense of others. To a superficial view it may appear so. If the new individual were of foreign origin it would be so; at times perhaps it is so. But it is not so when, in normal development a parent buds, and produces offspring, and plants the bud upon its own structure, transferring part of its own germplasm to a position of new advantage, along with others of that new generation. The transfer thus observed is an activity of the old generation, not of the new. It is a self-sacrificing episode rather than a self-seeking one, because the mature creature controls the process and not the infant. But the self thus sacrificed is only the inferior vitality of the other self which is promoted. And the principle is equally well illustrated in the human life of simple savages in a tropical

climate and generous environment. They grow together, being the similar offspring of a common stock, without need or thought of aggression.

It seems that the fundamental altruism thus first becomes visibly effective, as a transfer of advantages from the parent to the offspring, and a joint support in those advantages by the co-related offspring. In parenthood and brotherhood there is thus evolved the principle which underlies all the later complexities of such relationships, modified by the struggle for survival, which arises when environment becomes hostile, or overcrowding leads to competition for benefits not sufficient for all.

In all the development of higher organizations which advanced animal life presents, so long as it continues itself by parentage and birth, and at all times and circumstances, so long as individual death remains as the method of relief from worn-out organs, there persists and survives this fundamental interdependence as a primary requisite for survival; a stream which disappears at times from view but still persists beneath the surface. As altruism it reappears so source-like, and in springs of such purity, and in such abrupt contrast with surroundings, that it is a pardonable mistake to believe it a new inspiration.

When circumstances have imposed upon a species the extreme of offensive and destructive impulse, as, for example, in the solitary armed carnivorous beasts, there still persists in motherhood the purest devotion and self-sacrifice. And again, when in retrogression, or vicious perversion, of humanity, a higher life is depraved into a disregard in all other relations, there is a surviving instinct often apparent

in this sacred function of reproduction, which is the one tie to noble ideals.

And even in those species where apparently the offspring are abandoned to fate by parents who never recognize a duty toward them (as we saw in a study of the fishes) a tremendous effort is made, at the cost of the individual parents, to place the offspring in favorable circumstances, according to inherited instinct. The thousands of fish which make long journeys at terrible risks to deposit their spawn in their native waters high up in a river of innumerable dangers, these creatures are fulfilling the same purpose as the coral polyp which reaches out and plants its young upon the apex of its own structure.

In all species where there is any sign of upward evolution this prime impulse persists. It is to be seen in the highest of brutes as well developed as in primitive man, and there even better than in man of barbarism or retrograde civilization. Its function in simple humanity provides a test for the individual unselfishness by which the race self prevails. Man unarmed is defenseless in isolation, and depends for self maintenance upon the co-operative altruistic union in which his race was so evidently evolved. Therefore one of the highest functions of sex is this perpetual preservation of individual sacrifice. At man's birth, nay before his conception, the question of self abnegation is raised, and put to his progenitors, and the answer is life or death to the new born or prospective offspring. In nature's dispensation no one of these helpless scions can survive, unless a mother responds to the demands of nature for self-sacrificing devotion. This demand is the test, not only of fitness in

the offspring, but of fitness first in the parent. Refusal or neglect cuts the thread of lineage without punishment of the individual unborn or unconscious; but with final judgment upon that branch of the lineage, and its qualities, as this culprit individual has become possessed of them. And so with other things pertaining to reproduction, such as the absolute dependence of the mother upon the help of others, during the period of self-immolation, and the dependence upon her helpmate during even longer time; and, more remotely, the interdependence of both in sacrifices to make the home in which young can be reared. All these things are gateways to life at which entry is gained only by passing tests of altruism. In these tests the race is weeded and selected, and those unfit are turned aside by their own preference for other things, and the survivors are those qualified to subordinate the self of individualism to the greater self of the organized aggregate.

Thus it appears that altruism is not properly a reversal of the principle of self-preservation but only a preference for that self-preservation which acts by unity of the subdivided life, instead of by activity of separate individuals in disuniting rivalry. And the reason why this method of organized unity is preferred is not that sacrifice is desired for its own sake, but it is that self-preservation is better effected in the strength of the greater unit so promoted, than it is in the lesser strength of the smaller individual unit. It is still the benefit of the conduct unit which makes an activity right. It is the same regard for self-preservation and self-development in happiness, but it refers to a different self which is the greater self of the greater life.

The motive and method of co-operative altruism is seen therefore to be fundamental and native to life and not a late reversal of an opposite prime motive.

Its rightness still rests upon the necessity and value of self-preservation and its demonstration is in its actual survival in comparison with the opposite system.

CHAPTER III

DEPENDENT LIFE

In a consideration of the physical and material advantage of a character developed by evolution, it is perhaps of small consequence how the character originated, whether in accidental variation, or as logically produced novelty. But in any study of the psychological nature of man, and especially of the aspirations which address the future by forming ideals, an understanding of the source of the impulse is of high value.

When, in the confusion of relations which the civilized world assumes, an appeal is made to reason for a decision upon a certain act, it may be quite impossible to assemble the innumerable conflicting factors in the problem; and then a knowledge of the basic principle involved, may be as an inspiration. Thus altruistic action which is apparently erratic, or in unaccountable contradiction of the law of self-preservation, may stand clearly revealed in this light, and be perceived as a logical virtue. And even granting that conduct under the altruistic impulse, may be, like other kinds, sometimes in error, and may put forth efforts which fail, yet it must be seen that the impulse in its general purposes and effects is not only good, but is the part of essential good which is human morality.

The mutual support and co-operation cultivated by repro-

ductive sacrifice, extends in lessening force through all the looser relationships. So we may trace, from the parental sacrifice, a succeeding stage in the brothers' common interest, first as joint beneficiaries in it, and next as mutual ministers of it, and further as grateful supporters of its source. In fact the relations of offspring of the same parent do, by mere similarity and propinquity, first compel, and afterwards suggest by habit, the same mutual sacrifice in a lesser degree. And relationships which are of lesser bond continue the impulse which natural selections and survivals test and prove, and in approval encourage.

In this process the performance of certain functions by the way of sacrifice becomes part of the hereditary necessities of the race. Organs are developed which prepare and mature, and in due time provoke, desires and yearnings, and eventually conduct, which in self-sacrifice returns to the race what is first received from it. This necessity of sacrifice of the lesser life of the individual self, is accounted for in the perception that it is the fulfillment of a trust. There may arise accidental circumstances which may prevent a transmitting directly of the obligations of lineage, but which do not release the creature from consequences. There are impulses which were implanted by heredity which, if suppressed in their prime activities, will seek opportunity elsewhere. And when the physical processes are thus diverted, the psychological impulse craves outlet. In this natural desire arises that wonderful incomprehensible altruism which applies its forces with unreasoning devotion to fellow humanity; not knowing logic or cause, but feeling only the sacred right of its origin; and when in error, still sacred

in the discovery of new usefulness in its blindest efforts. It is the perception and utilization of this altruism by the self-consciousness of humanity which makes it a human virtue. In elementary form the subversion of the sexual and parental and brotherly instincts, and their suppression by circumstances, are afflictions which must be resisted and overcome, or suffered in serious disadvantage; and which, if continued, usually mean extermination. There arise in evolution variations in exception to this normal course, as for example in the life of bees and certain other insects, in which individuals are directly appointed to lives of sacrifice. The workers or neuters of these species, although they seem to be potentially perfect for transmission of life, are deprived by their association of the opportunity, and limited to a life of ministry to the community. The justice of such a dispensation must be sought in the fact, previously noted, that the alternative to this life would be oblivion. If we suppose the creature questioned, as to the acceptance or rejection of such a life, the offer would take the form of an invitation on one hand to a life of subordinate opportunity, or on the other hand to no life at all. Obviously nature is not indebted to an unborn creature for a right to live, and still less for any special privileges. Any degree or duration of life granted is a gift in which the creature is a trustee and debtor and not a creditor. So it appears that the self-sacrifice of incomplete neuters or workers is really comparable to their discharge of a debt or obligation to the race, in which the individual is the beneficiary, to the extent of his enjoyment, of the life afforded him for the purpose of his office, and without which he would not have existed.

In the same class come all those incomplete lives of subject animals bred under control and predestined for domestic work or for sacrifice as food. The flocks and herds are not normal children of nature mistreated by man and deprived of their lives and birthrights; they are the abnormal product of man's natural influence. They are indebted to him for the few years of life and happiness which they enjoy; and this state of indebtedness cannot be reversed and become creditorship, upon the plea that they are granted less than they might be capable of enjoying. This argument is a statement of facts visible. The millions of beasts which lead their placid lives in a civilized country would never have been without man, and would cease to be if man disappeared. The millions which will roam the fields twenty years from now, are yet unborn; and they will never be born, unless they are to be protected and cared for by man, for this limited life of subjection.

Now this light upon the position, in nature's scheme of compensation, of lives predestined to service, affords a better understanding of much of human activity. While such sacrifice is far below the highest, in an ideal sense, yet it is useful in the human organization of co-operative society, as is proven by its occurrence; and, when it does appear, it is undoubtedly governed by the natural law that the life thus devoted to the race, is to that degree the gift of the race, just as truly as the life which transmits itself again to the race.

There are among the lives most valuable to the race many which are thus so developed at the expense of the lineal energy. Indeed the two conditions go hand in hand. In the

event of a disability for procreation, there is frequently a full development of the energy and vitality which would have been expended in that function; and this and the instincts rising with it find acceptable work in devotion to other purposes of related nature, as when an unmarried woman gives herself up to hospital nursing. Similarly the inherited development in a high degree, of a faculty which is offered to, or demanded by, the general interest, will often suppress or supplant to some degree the instincts for duties of lineage; and the physical labor will draw force from the more natural functions. This we see in the man so absorbed in scientific research that he ignores marriage and neglects his individual interests. Thus the original impulse persists in a new form, and when circumstances demand it develops into dependent activity instead of the normal.

When such work achieves, as it often does in a division of specialized labor, the advantage of the race, and when the impulse of the brotherly instinct extends its scope beyond physical brotherhood to a wider relation, it stands as the natural expression of general altruism. Then in conscious perception of its benefits humanity rises apart from the rest of nature, by adopting altruism and its law, as one of the general guides for conduct, even where the benefit is not obvious.

CHAPTER IV

SPECIALIZED LIFE

It becomes apparent that a rule of conduct if established as a principle by fitness for race survival, and received in good faith as a guide to mortality, is not to be abandoned for expediency, or used only as a way of access to benefits deferred. The conception of a principle of moral human conduct, as compared with a mere law of animal life, is that humanity has by reason of intelligence an abiding faith in the principle, which carries it through situations of doubt, or of evident immediate damage, with a steadfastness of purpose which is reposed upon a knowledge of values higher than those visible at the moment. The natural law does not appeal. It simply awards consequences and allows free choice. But the human intellectual aspiration appeals in communicated sentiment. In consciousness and language it cries for the brotherly support of that common good which arose in the primitive absolute community of interest. It is an appeal for a return toward that community of interest which was neglected only under compulsion, and is now to be more and more resumed upon opportunity.

The faithful and instinctive adherence to the principle thus described provokes new phases of its action. It seems that reason is not to be the supreme guide but is to be co-

ordinated with the earlier accepted instinctive principle. It would follow therefore that errors, or what in reason would be considered errors, are pardonable. As a matter of fact that is the practice. All humanity pardons errors of altruistic sacrifice when they are sincere, and even pardons other offences because they are instigated in this motive. And in theory the life (or portion of a life) which is devoted to others has already relinquished, or left unassumed, the prime function of normal life, which is its self-preservation and transmission in lineage, and cannot be held individually physically responsible for error in the way that normal life is, for it cannot be corrected by a deprivation or disability in what has already been relinquished.

It seems that the altruistic life, and even that part of a life otherwise selfish, which is sincerely altruistic, is the product of the community, or of an enlarged conduct unit; and to the community falls the care and responsibility as well as the profit of such conduct. The aggregate so organized may demand or accept sacrifices from individuals, and their performance may become a duty if demanded, or a virtue if offered; but the acceptance of the service in either case is an assumption by the organization of responsibility for the conduct, and for the consequences to the community. If the conduct is in error the community suffers; if it is beneficial the benefit accrues, as was intended, to the community. Therefore, the preservation of the worker is the benefit of the community. Such is clearly the theory which explains so far as any theory can explain, the facts as observed. It places the obligation of estimating and valuing altruistic effort upon the community, and not upon the worker.

It is clear that to demand or accept help is the privilege only of necessity, and its appropriation by selfishness is a wrong, even when the help is freely given in virtue. The economic value of altruism consists in the net final gain of efficiency. There is no advantage in a mere shifting of labor from one to another unless its burden is thus lessened. The change, to be beneficial, must be one in which the new worker can perform the task more easily with equal results, or if less easily, then with greater results. The doing for another what he sorely needs and yet cannot do for himself (as ministry in sickness) is the ideal social altruism; but to do what another does not need, or what he could better do alone, is but a misjudged effort. The principle is established in ultimate greater good, and although it is often superior to a regard for immediate results, its sentimental value rests upon its final physical advantage. Altruism is the supporter of faith and hope and justice and truth as well as of charity, and in the upward evolution of human conduct it can be seen ever reaching out for more recognition. In superlative shyness typical of its unarmed weakness, it shrinks back from bad faith at the same time that it advances heroically to self-sacrifice for a cause which reciprocates its brotherhood.

With the conception of conduct as the activity of an organized society, it is observable and easily understandable that a lineage may gather strength by the preparation of sister lives, subordinated as aids to the main life current. A family already numerous, when variation changes fortuitously the development of certain individuals, may use them in a new capacity, which may prove beneficial to the family

in the natural process of unconscious selection, and thus add to the group of persons constituting the family, a heredity tending to produce, beside the normal descendants, others not normal, who are valuable for ability in this ministry. Men, and more often women, are thus produced in civilized life who by inherited instinct, willingly relinquish the privileges of bearing in their own bodies the continuity of the lineage; and others are excluded in unwilling disability or inferiority of those functions, yet many of these live noble lives to the great profit of their kin.

Let us look at this from the ancestor's view point. Suppose that in a conscious ambition to found a great family a wise man could direct his posterity, and in the exercise of that power suppose he designed for them an organization of specialized individuals, some of whom should perform one work and others another work,—and so carry further, the kind of specialization shown in sex function. It is quite conceivable that from his point of view the production of certain celibates, for the benefit of the lineage, with duties accessory to the reproductive strain, would be an economy of life force, and a profit to the clan, and, from his point of view, such a differentiation might be made without any injustice in the fact that the race life current was cut off in that individual, in service to the lineage. And especially could this purpose be justified if the lives thus diverted were those least competent to perform normal full function. Now this, which we have thus imagined as a conscious plan, is what in fact occurs as unconscious evolution, and the relations involved are seen justified, so far as justification appears at all, in the sisterhood of descent, and the unity

of purpose, of an organization of many persons constituting a unit of life greater than that of the individual, wherein men and women devote their labor to the benefit of society, that is to say, not to their own offspring, but to the offspring of others. This justification of a condition carries with it however a duty of sacred obligation of persons toward the individual life thus devoted. The sacrifice to others places in them and their organization, the responsibility; and visibly as well as figuratively, the acceptance of such service without gratitude, and without reciprocating protection, is a depravity which not only cuts off the service, but which reacts in a loss of that kind of co-operative ability and benefit.

The obvious effect of this understanding of the reciprocal privileges and duties of altruistic organizations, is a desire in justice to lessen the burdens upon any willing individual, and seek for its fair distribution. And in distribution, the principle showing most value is the free will of the worker, which increases efficiency. In this purpose advancing humanity repels that type of organization wherein some members are subjected to others under compulsion. Although the physical advantages of organization under compulsion appeal to humanity as well as to wider nature, in the transition phases of association; yet they are repugnant to the higher desires, and are superseded by the voluntary altruistic method in its proven greater benefits, when voluntary specialization comes into being.

The cultivation of the principle of equality of interest, reveals it as superior to mere unity of interest without equality.

CHAPTER V

ALTRUISM A CONSCIOUS IDEAL

It is not illogical to suppose that a high function of human aspiration is the formation of ideals, not immediately adopted as guides, but put out as tentative variations of the conduct motive, to be tested by experience just as were always all variations; but which will be superior to accidental, or to physically casual variation; and will find more rapid paths upward, by the reasoning consciousness.

But the test which these ideals receive is still measured in terms of material prosperity. The highest phases of human endeavor toward co-operation make for that prosperity, in the encouragement of good faith between man and man, and in the cessation of destructive aggressiveness, and in the adoption of united effort for mutual advantage, instead of predatory effort for comparative elevation. In this way there arises a more efficient type of organization, which permits of unity of purpose in larger and more powerful units; so that although the altruism of humanity is fundamentally the same as that of nature generally, yet it seems to be only in humanity that there is conscious recognition of its worth. Only the intellect of man, and only of highly developed man, seems to show the conscious control of action with knowledge of consequences. This evolution does

not appear as a higher altruism. It is a development of intellect, to a degree which affords a higher appreciation of altruism. No doubt the attainment of such intellect has become possible only by a previous or simultaneous cultivation of altruism; for intellect is essentially a thing of gregarious life in co-ordinated effort, and such life is necessarily altruistic at least in part. Yet the truest altruism may be evolved by casual variation and become habitual in instinct, and be practiced without a high degree of intellect. Indeed in this age of reason it is observable that the purest altruistic conduct, is an unreasoning triumph of instinctive conscience, over those arguments of intellect which suggest selfishness. The ordinary mind does not produce nor even promote altruism. The tendencies of over cultivated intellect are to self absorption, and to suppression of natural instincts. Nor does altruism necessarily produce mind. Observe the highly developed altruism of the domestic hen or the wild swallow, evinced with an amazing deficiency of brain power. Intellect is inherited capacity to infer, while altruistic instinct is inherited inference.

But when mental capacity has been cultivated to the degree which can appreciate, and realize in advance, the value of the simultaneously growing instinctive altruism, there arises a new conscious motive in conduct which may well be considered the highest and most moral impulse. And it seems (one must always hesitate here to claim surer knowledge) that man is the only creature thus uplifted. While all animate creation shares with him the rights and duties of continued life by fitness, it seems that to mankind only is it given to know or even to ask, what constitutes that

fitness. All may live by right doing, or die in error, but to man alone is granted the warning knowledge in advance that his conduct determines his fate. In this knowledge lies the incentive to a study of morality. It reveals early in the study the fact that it is only the beginning of wisdom. The perception that there is a law of conduct and the knowledge that it governs, is still immensely removed from the knowledge of what it is. That is the superlative wisdom which may well be the ultimate prize. But with the first dawn of the moral sense as an aspiring ideal, comes an appreciation of right conduct; and especially of that which is not based on self-interest, and most especially of that which involves self-sacrifice. So that altruism is closely linked with all moral perception. The appreciation of sacrifice at once promotes such conduct, first by commendation of fellows, an award of which is instinctively welcomed; and secondly by material help and maintenance, against consequences which the self-sacrifice might have incurred, but which associates will ward off, because of their instinctive gratitude, as well as because of an intellectual desire for the cultivation of the principle, as a most valuable factor in associated conduct.

CHAPTER VI

DESTRUCTIVE RIVALRY

HAVING studied thus the evidences of origin, and survival, of the principle of the co-operative instinct, it becomes necessary to turn back once more to the primitive beginnings of conduct to see what is the value of the opposing force, the predatory impulse.

Activity is visibly prompted by a variety of impulses, so that conduct comes of a mixture of motives, even in the highest phase, and in morally lower forms its resort to aggression and to disruptive activity is instinctive and uncontrolled. We have observed that in very simple forms life does continue under the original impulse, in which the offspring of an individual, forming a colony of similar origin and volition, remain primarily in unison. We have traced the course of an association in which altruistic activity persisted even when growth in prosperity caused crowding, and compelled some change of habit and provoked rivalry. Another colony may continue to maintain its individual life when crowding occurs, by the simple expedient of cannibalism; or by the expulsion or desertion, or neglect, of the surplus of weaklings. And this other development of conduct can also be seen successfully meeting conditions of environment in such way as to maintain the race life. But

its operation is negative in the main; it arrives at the salvation of the race by a method wasteful and improvident. The other method of encouraging the increase is evidently likely to produce colonies of thousands while this is guarding its hundreds. Later when higher forms of physical organs are found developed by both of these types these organs assume shapes in each according to the life led. Predatory creatures are ranged, mailed and armed on one side, and peace loving creatures, defenseless except by flight, on the other. These latter are already compelled by their inheritance to continue their lives in the associated relations for which alone they are fitted, isolation is danger as well as discomfort; while continued cultivation by survival and selection, of habits of tolerance of one another, confirms more and more this destiny as higher organization is reached. Yet from time to time a reversion in variation or admixture, or a new development in environment, will create new circumstances in which the other type is needed. So when we observe the ways of well established, highly organized animals, whose conduct is understandable, we see all degrees of mingled habit and equipment persisting, and we see their behavior to be compounded of all the previous phases selected and combined according to environment. For example, the wide plains where sheltering concealment and treacherous attack are difficult, have their herds of large and comparatively peaceful cattle, horses, deer, and the like, fleet for escape, and social for organized life, and in those qualities finding sufficient safety against all enemies but man. But in the forests the inviting opportunities for shelter are also those for concealment and ambush, and here the strong

destructive beasts of prey maintain themselves, and continue to force upon such gregarious creatures as remain their neighbors the defensive habits of concealment, as well as those of flight and association. And here some degree of armed force, which almost all creatures resort to in extremity, is cultivated, even by many whose race life is preferably harmonious. And in the sea and the air the two types may be seen similarly mingled.

Now in all these circumstances, observation of animals whose life we can comprehend and watch, reveals the associated or gregarious creatures in the ascendancy, not only in numerical majority, but really and in fact the growing occupants of the best parts of the earth, while the predatory types exist as parasites or scourges when in their extreme form; and thus heavily penalized; or they increase slowly by mixed conduct, when, despite destructive habits, their partially gregarious life is procuring them some advantage. Observe the natural numbers of deer, of cattle, of rabbits, of squirrels and the rest of the harmless and gregarious creatures of land, and in the air the flocks of swallows, pigeons, ducks and gulls and other birds; and in the water the shoals of salmon, and herring, cod and mackerel and the thousand big and little unarmed fishes. And then remark the lions and tigers and leopards of the solitudes, and count their small numbers, necessarily limited, and obviously lessening, and note the probability of extermination which awaits them; and see the eagles and hawks of the air and the sharks and alligators of the waters, all of which are by their own lives prevented from becoming numerous in the full sense of the word, even under the most favoring

circumstances. And note the dependence of these predatory creatures. They cannot exist alone, without the defenseless populations to whom they are parasitic; while these alone, without the fighters, are not only potential for independence, but are seen to be greatly benefitted by relief from the incubus when such relief occurs.

Therefore we see that the natural sustaining impulse to a growth of altruism or the consideration of others, consists in the continued surviving success of association. If this association develops an impure form and is involuntary or forced, its success, although checked, still means increase of efficiency; and greater impulsion toward mutual conduct is probable; yet the long persistence of a system of organization by force is visibly possible. It may be demanded by its prevalence in surrounding circumstances, in which case it will not probably come into close comparison with the purer altruistic life of other distant tribes, but will work its own destiny in due course, or yield perhaps to others of its own type, or to nature; or evolve itself into higher form, as we have seen possible. But there is clearly shown the expectation that sooner or later when the time is ripe it must alter, or yield place to those who have changed, and have elsewhere cultivated higher powers.

In a world of limited extent with increasing population destructive competition is a temporary or transitional method of advancement which, when a certain status is reached can perhaps retain it, but cannot provide for growth —while the other system of co-operation provides for continued adaptation with increase of numbers, in comparatively indefinite progress.

This is the elementary view of the foundation of the strength of civilized conduct against barbaric. While the imperfect barbaric altruism may make possible a triumph over all rivals, it is not self sustaining, but the higher altruism accomplishes an enormous enlargement of the unit, with corresponding gain in power, which has no limit in its possibility. This does not apply to modern civilization only, civilization in its dawn was evidently thus impelled by a natural crowding of people in prosperity, some of whom, doubtless enjoying advantages of freedom from barbaric aggressors, grew into a certain degree of altruism as unconsciously as do the other gregarious creatures. The opinion that this growth preceded any recognition of it, is not only credible, but it is in accord with observations still possible, but fast disappearing before the march of modern world conquest. When, during recent historic times, new people who had known little of any outside world were discovered, it was almost invariably shown that those of great numbers were always associated in habits of altruism; and that barbarism of blood thirstiness and aggression was coincident with smaller and restricted tribal development. The numerous populations of tropical islands were usually friendly. The great oriental peoples remained idealists and altruists even when their vast populations were dominated by alien warriors; and it may well be that these warriors were the servants and saviors of the peaceful faith, and not of their own aggressive power. On the other hand the predatory Arabs of the near east, the head hunters of the farther eastern islands, and the warriors of the North American Continent, which is today called west, were found in

disunited tribes and clans, even in that land of abundance where they had free opportunity for swarming and for nation building.

And we see further that these races of death dealing, self-asserting, strong armed, fearless warriors disappear in extinction, while the law-making, peace-loving, neighbor-loving, altruists, survive. Even though their altruism is imperfect it is in comparison with aggression the greater power. But obviously the offensive conduct of aggressors impels even peace-loving peoples to fight in self-defense, because purely altruistic conduct in the face of oppression is as disastrous as weakness or incompetence; and then the accumulated resources, the mutual support, and the consciousness of right, give them overwhelming advantage. In fact we see the most successful aggression illustrated when an altruistic race is roused to warlike action by necessity; or even when ill-judged impulse leads it into false ambitions. But these temporary departures from the habitual conduct do not conceal the fact that it is in the methods of peace that strength is accumulated and in those of war it is dissipated and wasted.

CHAPTER VII

ASSOCIATED MOTIVES MULTIPLEX

By circumstances which we may consider fortuitous, these two rival systems of conduct, the co-operative and the aggressive, are thus produced from a source originally single. They are launched each separately, by life succeeding under separate and different conditions. Thenceforth they may meet again and contend, blend and compare, to influence the evolution of conduct, each in due proportion. The selective process of survival favors the combination of the two, which, at any particular time and place, will best endow life for the mixed conditions then and there prevailing. Under this regime there may be an obligation at one place, upon the individual happening there, to choose between aggressive action towards others on one hand, and the suffering of injury or death by himself and his kin, through the aggressions of others; and the use of force under these circumstances becomes his right, unless higher obligations toward higher conduct units overrule it. At the same time in another place, where aggressive action has been succeeded by the higher tolerance, and by a greater unit of activity; such conduct might be a crime which would entail evil consequence. Therefore it appears that conduct has a fit or unfit character, consequent upon the conduct of the fellow

creatures of the individual in question. Here is another evidence of the mutual interest in activities which makes logical both the sacrifices of altruism, and the control of conduct by common consent of many in association. It is seen to be essential to the system of associated conduct, that all, or at least a preponderating and workable majority, should coincide in a united conception of duties and ideals. The evident waste of effect shown by sacrifice not desired or appreciated, such as the attempts of a higher or different civilization to persuade belief on the part of a lower barbarism, or of some unrelated culture, exemplifies the transitory nature of definitions of conduct, and their local and limited character. Inasmuch as fitness, and increase of fitness, not for another's environment, but for one's own circumstances, are the tests of conduct, and of its cultivation, it is clear that any standard which is foreign, and ignorant of those circumstances, may produce evil rather than good; that is to say, injury rather than benefit, even if it is in its own highest nature right; unless that standard is so widely set up that it is generally understood and accepted by all those associated in the responsibility. And in a self-evolved culture the same consensus is needed; an individual cannot elevate himself indefinitely, by the comprehension or practice of conduct ideally better than that of his neighbors. Such progress is feasible only within certain limits, after which it is necessary that the community become associated in the ideals, in order that their value may be developed without reversion to hostility of attitude. The idea of personal right in property, for example, is accepted as being beneficial in its stimulation to progress by industry, and to

the production of wealth, with a consequent independence of necessity, affording the opportunity for cultivation of the intellect, and for exploration of science. But it can be carried on in effectiveness only so far as the force and numbers of the community continue to find beneficial; or so long as outside aggressive forces and numbers remain either inferior or acquiescent. Wealth which by misuse or superfluity provokes the cupidity of others to the point of attack, is not a benefit but an evil to its owner, whether the others thus provoked are right or wrong, and whether they are of the owner's race, or of an invading barbarism. And even without open hostility as a consequence, wealth may be so exaggerated as to incur the disadvantages of a disunited membership, and loss of cohesion in the community.

And similarly on the other hand the social right of common enjoyment of advancing prosperity by industry, can be developed only so far as will still enable the aggregate to recognize the natural principle of individual responsibility, and of due personal title in the products of effort; and of support with its consequent stimulation, of any superior skill and enterprise, by superior rewards. There is only a passing interest in equality as an incentive to conduct. Equality of interest ceases to be a question or factor if the community fails or ceases to produce unequally anything to be interested in.

It becomes clear that the successful conduct which relates itself to its associates, can advance but little without proportionate advance by those associates. It may be expressed in other words that the benefits of altruistic civilization, attained by reciprocal support, can be cultivated only by

mutual interest and participation. It can be inferred conversely that the progress of a community is promoted by the separate progress of its members; and that so long as the interdependence remains unbroken, the individual benefit, and even an elevation of a few to superior reward, is advantageous to all; to those not so elevated as well as to those visibly successful; because of the stimulus to activity.

The toleration which is thus seen to grow rather than to disappear, as the organization enlarges, reveals the essentially voluntary nature of the association. The activities which are promoted in nature to this survival in fitness, are the voluntary activities. A moment's thought suffices to reach a perception of the greater efficiency of voluntary activity, as compared with involuntary. Even if well organized and well controlled, a conduct unit of enforced and unwilling individuals is seen, wherever found, to be of less capacity than a unit of equal size and equal organization, of willing unity. And to this efficiency there must be added the effect of the preference, rooted in nature, for conduct of one's own choosing, as a means to comfort and happiness, which is after all the chief purpose of effort.

A union which begins and remains as a voluntary combination, evidently allows a retention by the individuals of much of their original judgment and independence; potential even if not exercised, and this original character persisting, is in fact a continuing factor in human association. The persons coming together relinquish so much of their old nature of individual freedom, as is necessary to the union; and no more. They organize for such conduct as is necessarily the conduct of a greater corporation; and for such

conduct as the greater phase of the dual life performs more efficiently than the lesser or individual phase. But for all matters which the individual does properly and better by himself, they reserve freedom, or claim freedom if it has been lost. And for all conduct of all kinds, that in union as well as that in solitude, they reserve so much freedom as shall make all lawful acts voluntary and not controlled by others, but only by the individual perceptions.

In these principles appears the reason and necessity for that retardation which sometimes seems to oppose progress by undue regard for ignorance. Such delay is often a concession to the higher law of unity of purpose, by a lower law of immediate value, which value is only deferred in order to avoid disaster in too precipitate action. Reform proceeding by education is seen to produce voluntary co-operation, and thus to be more permanent, as well as more probably right, than enforced and violent reconstruction.

We may reason that the adoption of altruism does not involve a cancellation of the primary law of self-preservation, but really an effort toward the maintenance of that law and right, by the added efficacy of the consent and assistance of others. The natural effect of altruism is reciprocal benefit. If the virtue of an effort for another were in the doer alone, then all the tyranny of oppression, and fetish sacrifice, and of inquisition, might be justified; but if the goodness lies in the benefit as perceived and appreciated by the object, then his unwillingness must be sufficient to pronounce the effort defective. There follows inevitably the right of the object, the person benefited, to accept or reject, encourage or decry, such action, according to his own per-

ceptions. If his perception of good is at fault, it must first be improved by education, so that the action will become acceptable. Here lies the need of discussion and agreement, upon the desirability of such benefits as are suggested by the intellectual motives of conduct, previous to their actual operation.

The attitude of self-governance as a persisting factor in conduct is one which could not entirely disappear, even in the highest of motives, so long as life depends upon economical efficiency. Suppose that effort for others is a virtue, good in itself, even if made without the consent or desire of the object; then we would promote a system of activity on behalf of certain creatures, by others who knew less of their needs—while these in turn must labor for their benefactors, of whose wants they are ill-informed. Each group will thus be concerned most in the business of which its experience is least, and such a system would be absurd. Moreover, it is essentially intolerant, while true altruism is essentially tolerant. It is common knowledge that those who seek to enforce benefits upon others are least inclined to have others direct them. Such activity is in fact the gratifying of egotism and not of altruism. The goodness of help is perceived to be measured in its acceptability; and that too in terms of the understanding of the object.

In associated conduct the activities thus proceeding, in balance between the active impulse to sustain and benefit one's self and the restraint imposed by regard for one's neighbor, are the results of these two forces maintained in equilibrium. The normal conduct is that which obeys both in due proportion. The neighbor enjoys part of the bene-

fit, which secures his co-operation and assistance in the work; and in his turn he contributes a share of his advantages, as the price for tolerance and help. It being of course perceived that such sharing is not direct and stipulated, but is indirect and voluntary, and expressed in the confidence and faith of the participant, as much as in the deeds of the community. Altruism offers benefit without previous stipulation of price.

Even the idealized altruism, which is the abstract of such conduct, presented by specialized ability or authority, can be perceived to reach its highest expression in those deeds which one does for another because that other, while desiring them, is unable to do them for himself. The need of the needy makes an action altruistic, which would without it be dictatorial; and the comparatively high ability of the doer makes conservative and economical, what would without it be wasteful. It remains possible that unselfish sacrifice, even if undesired, may be admirable; and it is possible that efforts for others, even when wasteful of work in proportion to results, may yet be of virtue. But such examples do not show the true high worth of altruism. If no valuable results at all appeared these efforts would still have a right to respect as the product of a virtue which is instinctive and necessarily unreasoning, and therefore, even in error, lovable. But it is in the showing of a net and final balance of benefit over expenditure that conduct proves itself good, and it is in this respect that altruism inspires man with the instinct and capacity for association. The end is sought at times by individual action, for benefit in which all shall share; and at others, by collective work, for benefits which each in turn shall enjoy according to need; but in either case

the value is in results better enabling the individual, and every individual, to achieve his own proper purposes.

Altruism under the test of nature's uses is seen to be a principle in conduct, originating in the division of a life-stream into many individuals, in the separation of the ego or conduct subject, into more than one individual, so that it may specialize its parts and gain elasticity, which in this principle is done without loss of unity of purpose, and the principle is seen graduating into a precept, when reason endows man with a knowledge of its benefits.

The benefits are the organization of greater and higher units of the collective activities of the mutually interested creatures, who, although putting aside undue rivalries among themselves, are still banded in the greater self-interest of their association for its self-preservation.

Thus a new creature appears; an incorporation of the greater phase of the dual life, a creature which can change and renew its form, and can retain perennial youth, and to which death is only the transfer of life from old structures to new ones. And this creature is an entity capable of being aggressive to all the outer world. The outsiders whose aggressiveness can be reconciled, and who will enter the community of interest, are welcomed to embrace that relation, but the peaceful essence of its alliance still permits its engagement in active warfare with environment including the predatory foes of an irreconcilable nature. It offers in collective strength protection to the weak individual of its own brotherhood.

A demonstrating example of this attitude is the war of altruistic humanity against disease, which rightly aims at

the extermination of those creatures of bacterial nature, whose parasitic life depends upon injury to the higher organism. The right and reason of the persistence of the aggressive self is in this example very clear; and it can be understood as sustaining right of the same nature in less clear cases. An all embracing altruism is impracticable until the time of infinite perfection.

We find therefore that the civilized co-operative union is properly based on the old restraining respect for one's neighbors' desires, developed into voluntary considerateness, and become a habit, and thus impressed upon self-interest in varying degrees; and the greater and the purer the nature of this considerateness, the greater the capacity of the creatures exercising it for the organization of their associated units of conduct. The extent of this influence is in fact the measure of civilization and progress, and of human elevation toward perfection. The principles of growth in cumulative knowledge inspire units of the race life cohering in associated conduct; and growth enables the life to include larger and larger units, and to govern them more purely.

Any conduct of an individual in this dual life therefore is a complex activity, of the one person, and of an extended co-operating organization of persons, linked in sympathetic union of that greater life. And evidently the conduct may affect either a single or a multiple life or the activity may be produced in a joint operation of all of these interests at once, in varying degree of participation: human action is of that complex nature; the act of a person, done for himself, will usually have also some effect upon his lineal life; and

conversely action for lineal life will necessarily affect the individual; and again either will probably have a less direct, but still important, effect upon many associated lives, in almost infinite degrees of interest. There is little or no action which a civilized person can properly claim to be his own affair in which others have no concern. The altruistic temperament will be thoughtful of others, consciously or unconsciously in every act.

CHAPTER VIII

MORAL MOTIVE

We have earlier noted a probability that the first application of the striving human intellect to a knowledge of good and evil may have been in a recognition of the value of altruism—already existent as a surviving instinct—and an adoption of it as a rule of conduct, and as the foundation of a consequent code of morals. That is to say the beginning of that progress which raised humanity out of mere animalism was a perception of a good principle in self-sacrifice, and an adoption of it as a virtue apart from any visible gain and above any animal instinct, and even above the temporary arguments of self-interest.

This beginning of morality would establish the main issue as a contest between the forces of advancement and those of retrogression. It points to the suppression of the activity of aggression, and the development of the notion of harmony, and the marshalling of the power of an unseen right, growing in effective struggle against visible, forceful, present error. It is the foreknowledge of good in the remoter consequences, even as far removed as those called spiritual; and the knowledge of evil in those nearer gratifications which would sacrifice the future. Such an idealization may have made clear to the faith of moral man, the

principle which modern science reveals now as founded in his physical nature.

The evolution of this principle into a moral law is a natural growth. It visibly takes that form anew, in the family, when it has become lost in the larger world. For ages the maternal instinct alone, fought off a hostile world, in solitary knowledge of the great wisdom. And then the father, as lover first, and father afterwards; and then the brother, sister, son and daughter, learned in weakness the value of affectionate strength; and the knowledge spread through many degrees of instinctive perception of the worth of community, opposed to outer hostility; and enlarging until beyond the family, first the clan, and then the tribe and nation, were in some degree included in its brotherhood; and at last the instinct is defined by intellect, and its influence for good is recognized and formulated.

The measure of world civilization is in the extent of this influence. The process is shown to be far short of completion now. The present age in which many individuals are still held to moral laws by a major force instead of by their own personal perception; and in which tribes are by brotherhood bound into nations, and yet those nations remain in armed repulsion; is not civilized to the degree of its capability, although it is doubtless advancing as fast as is permitted by persistence of habits long practiced. The opposition of these backward elements is founded on legitimate conservative instincts, which adhere to customs by which they have profited, even when they seem to profit less, acting of course upon the basis of experience which has often shown cause for change to be evanescent, and untrust-

worthy. That which changes too easily will have no permanence, for it must be ready to change again. Such a course is right for a barely established vagrant life, and for rapidly evolving progress in new conditions. The march of a high civilization must usually be measured and sure, and without haste; and so even the methods of force, and of evil must exist until not only the intelligent few, but the controlling majorities, are convinced of their lesser value. They have not only the power, but also the inherent right to exercise that power, according to their own consciences and intellects, in the working out of their own destinies. Their duty to a better informed wisdom is only so much as that wisdom can convince them of, and no more. Their change must be accomplished by education and conviction; not by force or even over persuasion.

For this reason the actual condition of humanity at any time is of less import than the trend and direction; and even the velocity of movement is not to be considered without reference to its moment, and weight, and permanence. The goal is so far away that time is, as it always was, available without limit. Progress continues. Disorder and war and epidemics of crime do not arrest it. Despite all these contradictory facts, and notwithstanding a seeming rejection of religious precept, the world is advancing.

The present stage of human civilization is visibly proceeding in accord with this method of development. The rapid growth of democracy evidences the ascendancy of the voluntary principle. It may be inferred that the principle which inspires the higher successful conduct, is really established as a law superimposed upon those previously constituted. It

is to be believed that the goal of human progress is the continued intellectual preferment, of harmonious associated action, over antagonistic rivalry, or in other words the purposed supplanting, as a standard of fitness, of the destructive activity exercised selfishly, by the constructive action exercised altruistically. The survival of the fittest proceeds undisturbed, but the conditions change as numbers increase, and what was right becomes wrong, and fitness takes new forms. The chief factor is no longer physical force, but the organizing impulse.

The goal thus presented is not a finality; it is a continuing advance, oscillating perhaps in the never ended ebbing and flowing of the tides of evolution. It is continued advancement which is in sight, and not the end. For so far as we can see, the goal is to be always a new height, which, once attained, will enlarge the powers of vision to distances before unknown. To express the thought without symbol or simile; it is a self-evident fact that the increase of human wisdom to which we now aspire, and which we can now formulate and reach out for, and attain, will when attained, increase again the aspirations and the power to achieve.

This growing activity which looks to the future for reward instead of to the present, learns always more how to see into the future. Just as the life we achieve by our present feebly executed altruism, is higher and richer, and more successful than that formerly attained without it, and as the new knowledge is an inspiration toward continued effort; so the future will always promise, and the promise will always inspire.

The evolution of conduct is as naturally and positively

upward, from lower to higher forms, as is the evolution of physical structure.

And parallel with the achievement of moral ideals set up by the knowledge of good and evil, and which is a gratification of mind even in its instinctive process; there comes that for which they are originally conceived, before they are perceived; which is the material benefit and prosperity. We may see on every side in the higher civilization a triumph of material good over material evil which is amazing. The ever active hostility of nature is softened and warded off in the higher civilization so that storm and frost, and heat and hunger, and enemies and wild beasts, and in some measure disease and accident, no longer terrorize or even affright those who enjoy all that their racial humanity can do for them. The children and the aged; under the protection of those who are strong and fortunate, are guarded against these formerly bitter trials. To those who successfully realize modern possibilities, these evils, formerly dominant, are as outer things, heavy upon those less fortunate, and sufficiently familiar only to stimulate pity and help. And the most fortunate workers who thus protect them, enjoy the same immunity in different forms and degree, in their mutual service and support of association. Now this truth stands true of certain persons, in spite of all the suffering that remains unchanged for others; and it is the result of altruistic co-operation, in spite of all the contradictory hardness of heart elsewhere, that without pity strips the defenseless to clothe itself and its progeny, in a parasitic luxury.

By even small example the fact is established that the civilization of altruism can do all these things; and it stands

visible to our eyes that more and more in this direction is possible, and is daily done. Comfort and health are being awarded to greater numbers by it; and life itself, the life of the individual, is being extended in years as it is being increased in happiness. Now it is appreciably possible that at some future time, instead of a favored few, all or nearly all, should reach this prosperity. Thousands now, of ordinary people, enjoy that degree of physical well being, and moral wisdom and liberty and opportunity, which a little while ago came only to a few who were great. So it is to be seen that this is a still living progress. Then again the sacrifices made by those who bear the brunt of injustice become, in civilized progress, continually less. It is beginning to be understood that useless sacrifice is not a benefit, but is an error which nature never demands, and that the selfishness which demands sacrifice, or strength which compels it, must give place to a regard for the weak, for whom sacrifice is necessary.

So the wisdom which detected the value in sacrifice will apply that value for its fullest effects, and will suppress waste of it as earnestly as it would oppose neglect of it. And the end of this purpose will be to make a minimum of sacrifice sufficient for the maximum of benefit. In other words the purpose is not only to achieve the greatest benefit, but to do it with the least possible inefficiency of effort, and to apply it with the broadest equity.

CHAPTER IX

THE GOAL OF ASPIRING MORALITY

The tendency and visible progress of moral civilization toward greater and fuller realization, and therein still greater understanding, gives birth to an aspiration worthy of continued life, a fitting goal for our potential immortality. In the unperceived heights to which we may aspire, for our lineal selves in their own flesh and blood; are possibilities of a humanity developed toward perfection, beyond the scope of our imagination, in its attainments, and virtues and attributes. We cannot describe or define that which is to eventually transcend our present power to imagine; but we can look, with a hope approaching certainty, to that next eminence, which is the beacon of our present system, and is within the perception of our limited intellect. Even granting the possibility that our philosophy, of intellectual altruism, may be superseded by a better system, as far superior to this as this is above that of survival of experiment, and destruction of unfitness, yet, without appreciation of this unknown advance, we may seek much of progress in the direction already begun. We can believe in the logical sequence of upward evolution to grandest things; because we have no difficulty in believing in the already achieved lesser things, which are now to be seen; and because belief

is, and has been, reposed with advantage, in aspirations less assured than this. We can see not only that the prevailing effects of the action of associated humanity under the system of conduct which we call conscious altruism is rapidly upward, but that it may indefinitely continue upward. We see the individual life not only extended in duration and increased in security against the hostile environment, but we can be assured that this extension, and this increase, can continue; and will spread, moreover, to benefit more and more of the world's populations. In mere enlargement of scope of what already exists we have, in our perfect comprehension, a feasible and worthy development of earthly civilization; in the raising of all mankind out of the afflicting power of hunger and exposure, persecution and war, tyranny and injustice, ignorance and bigotry. These things are today practically in process of subjugation. They are no longer terrors for those who are established in the comfortable protection of the power of a free civilized nation. A few years ago that was not so. It is now only partially so, for those preferred, and in a limited degree. In a few years more it will arrive surely (except for the possibility of catastrophe which is always over us, but which the life of the world has survived for all the ages) that millions will enjoy this immunity which has now been achieved for thousands. Injury by cold and storm and famine and flood and other manifestations of nature's hostility too, is almost eliminated in the protected civilized life. The proportion of that loss is so small among old people and children, and those in care of altruistic civilization,—housed in dry and warm homes and fed by the aid of railroads—that they live and

die with an almost entire immunity from the natural catastrophes which weakened and decimated their pioneer forefathers. The accidents which prevail occur in the course of voluntary competitive life, and these are only too considerable. Yet though they call for care they make even now a mere fractional reduction of the good which palliates them.

The list of evils overcome needs to be extended, and the extension proceeds. From natural hardships it advances to accident and disease. It is strange that it should be so, yet industry and love which can achieve and bestow, almost surely, protection against other ills; has least effect against disease. Energy and wealth, used selfishly or altruistically, do not afford the power to secure immunity against those plagues which all men endure. Yet even here the thing not yet done is begun, and its end is quite conceivable. We may hope, because we can see it possible, that disease organisms can be exterminated in the same manner as are the other predatory parasites, the tigers and the smaller vermin. In the broader method of altruism, by which those enjoying the power and opportunity, aid the neighbor who is prostrate, and destroy his enemy, there is now a prospect of the eradication of evils, which was never visible in selfish motives. Before this new mode of attack this old enemy will go down as the others have. It is no mere figure of speech to call this warfare against disease, a new mode of attack; for although self-sacrificing aid to the sick is older than humanity, yet the aid was purely defensive, an act of love, directed where the love was bestowed and not elsewhere. But in the new altruistic organization the activity is not only in defense of one's own lineal life, but of all

humanity. The line thus extended to better guard the weak, reaches in a mighty circle which protects also those promoting it, and thus becomes an increase of social efficiency.

We can therefore believe that as physical advantages come to be further added to the lives of all men, in the way they are now partially achieved for a few men; so also mental power and psychological understanding will increase, and comprehension of the universe will be extended.

The mind of man perceives facts, and grasps definitions, and solves problems, which a little time ago were not only unapproached, but which would have been uncomprehended if perceived. We can believe that in a few years more, things will be defined which are now unthinkable, and will be substituted for many conceptions now disappearing. The capacity which is trained and expressed in mathematical reasoning, produces results in a knowledge of the universe, before which the unexplained continually explains itself.

The light of this knowledge is no longer the secret power of a jealous caste. It is shed upon all humanity so that all may follow the leaders who carry it forward. Not figuratively but actually, the illumination of modern science and reasoning is for all, and so partakes of the loftiness of moral progress. In this light some things appear imperfect which lately were held up as examples of wisdom; and, what is more to the purpose than the exposure of error, other things long known as guiding impulses are shown to be of eternal authority. For every old moral law overthrown by modern science, there are a score re-established in newer form.

In such enlightenment man perceives man and attracts man, so that millions share an understanding which a few years since was only dawning in the minds of a few hundred. It is in fact the primitive principle of universal relationship, brought to light again, after having been obscured and dimmed by ages of ferocity. It is not our creation, nor even our discovery; it is merely our preception of opportunity to cultivate our inheritance. And we know that this knowledge is not sterile or purposeless; we see its effects. Who can face this upward movement of humanity and venture to limit the future by his little share of present knowledge? Who then can bind the present to the inheritance from the past? Surely the reward of faithfulness is beyond description.

This inheritance is a stewardship, and the only accounting of it that will prevail, will be a showing of it, not barren, but with products and profits added to its physical and intellectual abilities, to maintain the upward progress. The whole purpose of conduct thus enlarges its field, even while the continued maintenance of life in the face of a hostile environment, remains always the prime need of each present moment, without prospect of change. The things that change are the manner of resistance, and the means of maintaining life; and the perception of them, and of the consequences. The overcoming of opposition by altruistic co-operation, does not abolish the promise of achievement of conditions of still greater good, and does not invite merely greater enjoyment. It demands the rise of the organization of life into higher and higher forms generation by generation, as a qualification for sharing in the

higher life thus reached. Thus we can see that progress is not only present and certain, but it is exacting of effort for participation in its reward. It is more than a privilege; it is a duty, to be actively pursued. The consequence of neglect of this duty is unfitness, which brings decay and weakness and, if continued, a passionless, merciful extinction of the faithless and faltering, in race suicide.

Nature is thus seen to present to each human being for the due exercise of his volition and will, compensating awards for activities not immediately effective.

A belief that this award of compensation is not a sufficient inducement, and that conduct ignoring it will be more satisfactory, is permitted; and such action is entirely feasible. It is not forbidden in nature, to appropriate an undue part, or all, of the energy and substance and privilege, inherited from the lineage, to the selfish consumption of the individual trustee. Such action is in his option. It is tolerated temporarily, in view of the automatic consequence that such a perversion carries, to the dual life perpetrating it. If the individual life appropriates what, in the general opportunity, is due to be transmitted to successors of his kind, the evil extirpates itself in a minimum of time, and with a minimum of trouble, by the deprivation which the lineal life suffers in the impoverished successors, or in the absence of any succession; then the death and end of the unworthy strain makes room for something better.

And the consequence of sufficient good action, according to the variable standard of relative fitness, is continued lineal life, through each individual. When the upward movement shall have achieved all that is noble and worthy in

our present aspirations and shall aspire to things still higher, our own flesh and blood in our own form and resemblance idealized, shall be there, and shall enjoy the result of our right conduct; holding that privilege so long as by right conduct they continue fit and worthy.

And the degree of this our participation will be according to our degree of fitness of individual life, and according to the rightness of its subordination to the higher phase of its dual nature, to that higher immortal phase of life which is the being of the true ego.

CHAPTER X

VARIABLE IDEALS

HUMANITY, as it exists, is found to be an aggregate, seeking unity in organization, obeying impulses due to the fact that its members are co-related in a common origin, as of one species; and governed by the same natural laws. During centuries and ages, generations and races have pursued different courses of evolution under differing circumstances; and have reached such different conditions that it is scarcely credible that the same law has applied to all. The variations, cultivated in obedience to necessity, have been by nature chosen for preference in survival under entirely different environments, and even under different natural systems. And the result of this long continued growth in separate series, is a number of distinct schools or variants of morality. The codes and conduct developed in some places by success, are methods of life which in another place have been by nature suppressed for failure. The things which prevail in any one country are different from those dominating in another; manners which represent the progress of centuries in isolation, stand insufficient when that isolation gives way to a wider contact with other humankind.

In the sudden extension of human travel, and interchange

of knowledge, all the nations of the earth are enabled for the first time in history, and probably for the first of all times, to observe one another, and to compare the purposes and effects of their ways of living. Some are revealed as possessed of ethical ideas of such old establishment, that in their very excellence there is torpor, others are seen endowed with a restless energy and variability which have achieved so far momentum rather than profitable position. And others again are found deficient and utterly wanting in the comparison, or irredeemably committed to a wrong course of activity.

Still others are evidently blank, as tablets upon which no writing appears, of which some are receptive and ready for new impressions and new responses, and others, equally blank, are incapable of receiving impression. These primitive men may be examples of persistence of the earliest types, or they may be evolutions of a newer primitive type, or they may be regressive races reverting from higher to primary conditions. There is probability that those persistent in barbarism, are so not only because of environment, but because of an inherent incapacity for higher development, which hitherto has been no bar to their occupation of their territory, simply because in the abundance of the world's space there was room for them and their wasteful system. There is probability that the strains of humanity which show superior intellectual capacity now, are those which were differentiated from inferiority in the remote past of human evolution, and are not merely temporary beneficiaries of better opportunity. This view is in harmony with that afforded by the broader view of the descent of

man, indicating that humanity as a race was differentiated from other animal life, in a period long antecedent to the appearance of the nearest present species of brutes. Just as the relationship of man to the ape is utterly indirect, and only through an ancestor very remote from both, so the relationship between Aryan man and the unrecognized savage is remote, in a common source of the distant past. Even then the difference was probably first one of aptitude, and not of condition or attainment. That aptitude which has produced improvement continues; and will continue to produce it; and the lack of aptitude persists, and will persist, to prevent progress.

These surmises, although not in themselves conclusive, are in harmony with observable facts. The great divisions of mankind, racial, national, and political, show, as we have noted, utterly different standards of conduct; and yet their progressive evolution, when visible, indicates a common law. They have systems of morality so much at variance, that each one restricts the authority of that wisdom, to its own sphere of action. The peoples which have attained foremost rank and power in simultaneous development of justice, and morality and social science, do not yet apply these principles to the highest and largest units of conduct; but still engage in destructive armed combat to settle by force the matters upon which nationally they become rivals, and in doing so individuals of each race, or even of each differing opinion of the same race, perpetrate, with confidence of righteousness, deeds which they have stigmatized as crimes when used between lesser units.

Moreover the teachers, whose specialized duty it is to

discover and announce right and wrong, differ in the extreme in their review of this war conduct; according to the degree of their allegiance to the higher humanity and remoter motives, or their instinct for emotions immediately impelling; and still more they differ, according to the beliefs, and creeds and dogmas, to which they are committed by prejudice and by allegiance in religious and political organizations.

These well known facts present visibly in actual life that idea which forced itself forward in the study of principles, that there is in practice no fixed standard of conduct. Yet the progress of humanity shows a certain grand orderly movement, producing a condition which is far different from what would be expected from chaotic disregard of all attempted standards.

The contradictions lie chiefly in the alternating ascendancy, in environment, of the two great systems of self preservation; the constructive, and the destructive. It appears that, although a nation of people may so far realize the brotherhood of its members, as to suppress much of the open practice of predatory selfishness among themselves; yet in some cases it has not achieved a sufficient understanding of, and sympathy with, the neighboring nation, to permit it to enjoy any apparent advantage, if by force it can secure it for itself. And usually there is a persistence of the repulsion until it is mutual; because its too rapid disappearance on either side, would open the way to destroying aggression of the other. It is impossible for a pacific nation to live in peace if an aggressive neighbor attacks or threatens.

Therefore in the practical efforts for self-preservation the resort to armed force is imposed, even upon those despising it, so long as it is persisted in by others. But it is observable that the results of the comparisons thus provoked, are most amazingly in favor of the conduct most constructive and least aggressive. It is not only to be seen now, but it is recorded in all history, that the peoples who have best cultivated their powers in industry and commerce, and in mutual support and trust, have thereby secured for themselves elements of strength, enormously greater and more enduring than the essentially aggressive qualities they have relinquished. The savage disregard for suffering, which is lost, is more than offset by the value of the civilized alleviation of a soldier's hardships. The barbaric stoical endurance of slaughter in defeat is balanced by the civilized practice of surgery and medicine. The ignorance of arms of the million workers, is made up by their skill, and by their scientific equipment, and altruistic support, for the specialized soldiers. And in the contests of nations when reaction has measured strength with progression, that is to say when a predatory people has engaged in contest with a co-operative people, the higher principle has always prevailed, other things being equal. Even in cases, which have occurred, where the power of government and control of a mixed nation has passed to a militant people by their conquest of an industrial people, it has often been done without displacement of the civilization; and may in some cases be regarded as an endowment of, or an adoption by, that civilization, of a somewhat exotic piece of militant machinery for its better protection, as happened in the Chinese acceptance

of the Manchu rulers. History shows examples of the entire absorption in a peace-loving people of a hostile invader whose characteristics have been serviceable for a time, only to disappear in the subsequent amalgamation. The Norman conquest of Saxon England was an example of this fusion.

We see then in the hostilities between nations, not always examples of conduct in accord with the wisdom of this generation, but often examples of a persisting but declining system of the past. The reluctance with which human nature abandons methods which have been established by success, makes this contest long and possibly endless; for the tolerance of the altruistic system, will extend even toward the enemies of its association; and permit, perhaps with instructive wisdom, the existence of opposition which is entitled to respect. The new humanity of altruistic type does not however depend upon its own strength alone. As we have seen, the system of its enemies is in its nature limited; predatory life, when relieved of its incentives, tends to revert to peace, and to the enjoyment of peace; and with the example and precept of neighboring altruism, that element in any race which has best preserved the instinct of harmony, will quickly leaven the mass when opportunity is presented. Hence it arises that the nations change rapidly by internal impulse in an age of rapid evolution; and, sometimes without violent disorder, and at other times with much trouble, the people divert the energies of conduct into new paths.

Now it is a curious yet self-evident truth that in a rapid progressive upward development, the most conservative conduct, which has been the most reliable, ceases to be perfect.

The reluctance to change which has many times been virtuous in its refusals of invitations from the beaten path, becomes error at last. When this opposition to novelty is allied with a selfish love of power, which often develops in the exercise of it, there arises the situation where new wisdom stands in rebellion before the old. It is equally true that in decadent times, popular loss of wisdom will leave the established moral rules and their ministers in an isolation of superiority, from which influence has departed. In both cases there is breaking up or separation into opposing groups, with loss of sympathy between the old leaders of a community and its less conservative elements.

CHAPTER XI

VARIABLE ORGANIZATION

MANKIND is thus found to be grouped and partially united in racial and national aggregates, which often lack community of interest, and are divided themselves by differences of purpose, which may arise in many ways, but which when no other cause exists will develop in the unavoidably unequal wisdom of individuals.

It can therefore be said that these inequalities are necessary conditions of the system as it exists, and not mere removable incidents in opposition to it. External opposition when overcome could be ended, but this internal opposition continually reappears. And as this opposition frequently imposes new forms upon the older ones, it evidently denotes an experimental variation of conduct in these greater units, with possibly the same functions as pertain to the variation perceived in individual conduct. These aggregates are thus in process of comparison just as the lesser ones are, and the fittest are surviving, in natural preference over the others. Here too the process of selection is becoming less destructive, in that altruistic contact invites change by conversion to its methods, and conduct is purposed as well as experimental. Yet it remains true as before that in the absence of adaptation the old law of consequence still solves

the problem by the destruction of the unfit. We may see in this chaotic mixture of activities, an evolution which is still proceeding by law, and that law is the same as was visible in smaller things. Here also becomes apparent a constitutional difference in capacity. Two natures, equally impelled by the competitive advance, may be seen, one capable of elevation and the other only of destruction. In long established, persistent heredity, one may have latent tendencies toward the higher life, which circumstances have restrained; and the other may have its character based upon a persistent and hitherto successful use of the predatory, or of some other methods which are obsolete. So a race of mild, pacific savagery, despite its abject backwardness, enjoys some degree of opportunity because of its pacifism, and to some extent secures a share in the succession, as we see in the case of the negroes in America, while the war-loving, barbaric nation, refusing to participate in what it despises—the warrior Indian—goes down into oblivion. The situation is still that of survival of the fittest, but it is according to some law of fitness which changes and has changed, and which is not declared in any permanent standard code. All the standards and codes which exist to aid and control the individual stop short of assumption of authority over the world units. And moreover great efforts to extend the influence of the stronger codes have not succeeded in making them universal. The imperfect successes of these efforts show, that universality of standard is as impossible as permanence of standard. What is right at one time may be wrong at another, is an obvious truth paralleled by the other, that what is right at one place may be wrong at another. It

may even arise that, as between two courses of nearly equal value, one is right on one place, simply because of some convention to which men make concessions in mutual respect. So it occurs that nations of equal cultivation may properly differ as to details of conduct; and if equals so differ, it is clear that those unequal must present points of greater difference; and these differences operate to limit the proper scope of any human laws which have been evolved under limited conditions. But although we detect the absence and impossibility of unity, we may still trace much similarity of purpose and much community of ideals and some uniformity of expression. There are cardinal virtues common to all the great codes which are generally promoted to a nearly undisputed permanence. Such for example are the ideals supporting truth, justice, duty, faithfulness, pity, respect for life, philanthropy and liberty; and love, which includes all these and more. Yet even these cannot be imposed upon inferior people in the same form accepted by the superior race or condition of men. The attempts in compulsory elevation to morality have failed in regard to these highest virtues as well as in lesser ones. And on the other hand the most successful extensions of higher civilization into lower, has been done in a tolerance of imperfection in the degree of culture; and insistence chiefly upon the aim and direction of the development, a practice of tolerance to teach tolerance.

It is also clear that right conduct, as perceived by wisdom, can be imposed upon ignorance only in the negative function of restraining what is wrong; which is in fact the exercise of the common collective right to oppose injurious activities;

that right which we perceived as making the beginning of responsibility when volition first appeared. In this right it is competent for the collective wisdom to declare precepts against murder and theft and perjury, and, either by a strong leader, or by a common activity, it may make its opposition to these and other crimes more or less effective, and so in part purge the community of them; but it cannot by any such means compel active virtues. It cannot make the man love truth who is deterred from lying only by fear of penalty; nor can it induce one to give aid to the helpless by the same means adopted to prevent him from robbing the weak. These altruistic things are the product of long continued voluntary thought which breeds conviction, and the most that the advanced can do is to educate, and lead up, those degraded or delayed, step by step, beginning at the bottom, where the teacher must descend to the position of the pupil. This process is in fact visible in all the successful efforts at control by superior intellect, and there appears in it a power and effect immensely greater than in those other means wherein force demands compliance with laws not understood, and even insists upon impossible mental perceptions; under penalties and punishments.

In the organization of the great social units which show the most unity, the underlying principle, the influence which comes nearest to a world-wide scope, is that of the teacher making this altruistic descent to the lower level of his pupils. A consideration of this attitude finds it to be based upon a recognition of the right of the governed to certain privileges of his own position, however low. Not a theoretical concession of right is here meant, but an actual state of

affairs in the world, wherein we can see successful propagation of good by the exercise of this individual right; and a stable, natural progress of humanity, in ways, and at levels, below the scope of the makers of codes. We see co-operative commercial civilization, through its eager practice of trade and industry, attended by barely enough moral teaching to deny its own vice, securing domination over barbarisms of all styles and strengths, by meeting them on their own level and touching them with the almost unconscious higher abilities and higher desires, and we see these desires grow into ambitions, and acquire self-sustaining power, so that new units arise and races are blended, or work side by side. And while this growth of commerce and commercial mutual interest has extended until the whole world now feels it, even to the remote corners, so that there is no longer any country unknown to it, the old missionary efforts seeking to devise a standardized goodness of conduct, and to impose it upon the world, have turned from arms and conquest by which such conversion was once hoped, and has come to seek alliance with the commercial and utilitarian motives.

The true followers of false prophets have fallen but little farther than the false followers of true prophets; for similarly the internal affairs of the nations have escaped the former compulsion toward formulated moralities, and the religious power, which was supreme and vindictive in this regard, has become a mere protest; while the functions it failed to perform are replaced by a striving and searching for knowledge amid the wrecks of moral authority, and by instinctive revivals of emotional memories.

And yet out of this disorder, which seems to the old

philosophy to be degradation, there is rising a continuous rapid evolution toward higher ideals and better achievement. The liberated humanity of today lives in a perception of good and evil which is growing, and is immensely greater than it knew under tutelage. It perceives the lawful authority exercised a few generations back as a perversion of power, and regards the still subject peoples as needing emancipation as the first step toward elevation, even while these others still hold steadfastly to their faith which is superior to their wisdom.

It is not surprising that in this transition there are appearances of error. It is only in accord with natural law and precedent, that with great change of circumstance, there arise great activities in experimental variations, from which only a few will be selected for survival, and of which many may be regressive, and even bad. It is natural too that many individuals, and many associations, failing that control which custom has taught them to expect from authority, and lacking perceptions of their own, should err in the simple blindness of free ignorance, and follow only their own desire as a guide, in those matters which no longer appear to concern others. The surprising thing in all this is that the turmoil unbridled is usually obedient, in part at least, to an unknown law; the associations and clans and nations of many different standards are usually evolving the same new ideals; and even the violent champions of liberty, in declaring their people free, usually join in a new concept of authority.

CHAPTER XII

AUTHORITY

The evolution of greater units of conduct from smaller ones, is perceptible in all the history of civilization, as an effect of increase of capacity. The ability to effectively combine by which a nation organizes and acquires solidarity, is an ability which arises in morality, and which grows and enlarges only in proportion as that morality develops. The higher forms of association, and the new forms of morality, are evolved together necessarily; because the moral principle creates greater cohesive force, and therefore enables the increase of numerical strength; and this again stimulates and in fact compels a continued responsive progress, as a means of maintenance. The relationship thus discoverable in the facts of complex and intellectual conduct, is found to have its source in physical and primitive needs. The simple organization of the family, the parents with the brood of immature young, is the natural early type and pattern, of an organization directed by the wisdom of those obviously superior, and united by unavoidable dependence. That this organization is moral cannot be disputed. The arbitrary character of the government is, in the beginning, just as normal as is the control of the somatic body by the mentally qualified person. And when the family enlarges, and in-

cludes several related broods under autocratic patriarchal control, it may still retain an essential moral character. The heredity of the governed is then the direct product of the governor, their needs and physical ambitions are but renewals of his, and when morality assumes form, that form first appears in the conduct of experienced age, and is transmitted from age to youth as naturally, and received as readily, as are the baser bodily habits. Education in the home, of the child by the parent, is in fact an extension of heredity itself. It is the supply, to certain physical capacities, of the knowledge most exactly suited to those capacities, which no other than the parent can have. That knowledge is the experience of a life organism of certain peculiar individuality, and the offspring which has those same peculiarities, profits by and needs, that experience, more than any other experience.

Therefore so far as this parental and patriarchal control can extend over its own heredity, and so long as heredity continues to need extension by education; such control is and will ever remain essentially despotic in nature, although qualified more and more, as the rights of others in a community, mingle with and modify even parental rights.

But this despotism remains moral only so long as its base rests in heredity; and the paternal sympathies and infantile needs show community of origin and of purpose. When many families enlarge into environment of new conditions and new contacts, that sympathy lessens, and new ones arise of the same nature, but of different condition; and a union of these many clans is no longer a group of dependents, with a naturally superior leader, but an association of such groups

with many equal leaders. Then, only the persistence of habit maintains the form already established, by the promotion of that leader comparatively best, or presumed to be best, or the one strongest and most ambitious; and he continues to exercise authority of that same despotic character which he feels and believes to be moral, but he exercises it in relations where its morality no longer has the same physical basis in the same degree as of old. It is true that in a lesser degree consanguinity makes a governor more fit and acceptable. Experience and history clearly show the normal rightness of racial sympathy between a people and their kings or priests or leaders. But the wrongness which appears as this stage enlarges, can be seen to consist in its emergence from the scope of all that real superiority which made partriarchal despotism beneficial. Parental authority has then not disappeared; it remains autocratic and yet moral, as before, but only as before in its limited sphere. The tribal unit of conduct enlarging into a nation has become too diversified for that method of government, and it fails to secure unity of action.

But the evolution of higher modes of co-operation is shown by history to be a slow and painful process of experimental variation and survival. The perception of a new way of beneficent rightness may come to the wisest and the most sympathetic minds soon after the need appears, but it is not available until the greater number and greater forces of all those concerned come to believe in it, and it is not stable and effective until such a majority has it so rooted in experience and heredity that the belief is natural and instinctive.

The history of the political and religious life of nations has been better preserved, of course, than the records of activity of the smaller aggregations of humanity. The common familiarity with the progress of mankind, in the practice of national organization, makes it available as example. We may study in that phase the general principles by which all such aggregates acquire cohesion and harmony of purpose, and so become conduct units, although it must be remembered that between the small and simple definite organizations, such as the family, and the large and complex—but still comprehensive—national organizations there are an infinite number of true units influencing conduct by their corporate harmony, which overlap so that their effects are not readily comprehended. For example the associations and congregations of certain persons in societies and clubs for specified purposes, are effective in their own activities; and yet so diversified as to be impossible of general definition or description. Then again the inner groups of persons for governmental and political purposes—the great partizan and municipal and commercial and educational organizations—and the combinations and unions of men in their special industrial capacity—all these and many more are examples of effective conduct units in which the human individual loses his identity, and gains a place pertaining to his racial and continuous nature.

The evolution of these organizations is however coincident with that of the greater ones which we may study in history, and is more or less evident in the general record where it appears that they tend to agree in type with the governmental. In fact a modern democratic nation is like a club

in which the members have agreed to certain rules for the general good. Any new applicant for membership must agree to abide by these rules, as a condition for his admission to the benefits which the older members have accumulated. He has no right in a share in them unless he will contribute to their support according to his ability.

CHAPTER XIII

THE ALTRUISTIC TYPE OF GOVERNMENT

In all the variety and confusion of ideas in regard to the standards of conduct, and means for their promulgation and enforcement, there is to be recognized one factor, or element of authority which dominates the modern social evolution of mankind, and which is generally conceded and asserted when other authority is challenged, especially as to the problems of civil government. This factor is the right of a people to be governed as desired by its greater numbers, that is to say, by a majority of its qualified membership. The advocates of this principle sometimes limit its present expression to a demand for protection of the individual from misgovernment by a too aggressive power. This protection is secured by a constitutional restriction of the functions of government, so as to preserve to the individual certain stipulated liberties. But the fully evolved idea usually formulates a supreme authority inherent in the people as an organized aggregate, to be expressed by the majority, and vested in their chosen representatives.

There is no newness in this idea, it is in fact the direct product of the primary need, that any individual shall have regard for the effective opinion of his neighbors. Humanity in association evolves this idea anew, out of its instinctive action, whenever necessary, and perfects it into practical

forms differing according to the customs then and there prevalent. Therefore, when any complexities of form, which may have been allowed to accrue under a system of semi-predatory civilization, are becoming obsolete, and are yielding to higher ideals of altruistic co-operation, we see a general reference back to these first principles, sometimes in search of a merely convenient organization, and sometimes as revealing the true understanding of the moral source of authority, upon which those with claims to independence, may dispute with older control.

The consent of the governed to any operation of government is asserted to be not only a matter of policy, which may be exercised for the attainment of wise action, according to the will or power of the people or the governor, but it is claimed to be a necessary foundation for any right act of governmental control, because the righteous source of all such authority is in the desires of the people themselves, not as a mere privilege, but as the essence of rightness. In this view, what a social aggregate desires, is right because the aggregate has the only intelligence, and the only instinct, physically qualified to prescribe its conduct according to its inherited capacity and structure. The opposition to this claim naturally comes chiefly from those established in authority by ancient usage; and in different places it rests in different titles. Some of these are based upon a former acceptance or choice of leaders by the people. Such title is practically of the same type and principle as the radical one, unless it be so old as to be obsolete. But those titles which really raise the issue in full force seek to establish for some superior wisdom, a right to impose its conduct upon others

of less wisdom, whether they desire it or not. This is indeed a well defined question. It cannot be denied that authority which emanates from the people, and is to be somewhere personified, may be by them entrusted to a constitutional king, or even to an unlimited autocrat; if the majority find that course desirable. There is nothing in the principle of popular will which demands that it shall be carried into practice only under the forms usually called democratic. But there is in the principle an essential need that the authority, conferred no matter where, shall be sustained by continuous support or consent; and this forbids, or at least discredits, any transfer of that authority which endeavors to restrain the inherent rights of future generations. It therefore denies the existence of a vested right, in any governmental powers derived from the past, and assumed to control the present. Rulers are prone to fortify themselves in power by the personal use of privileges intended to be official. This is strangely true of the institution, even when the office is elective and limited; and much more is it true when the title is hereditary, and a family lineage is interested in it as a vested right and possession; and most strongly does the same tendency develop in regard to an imperial or autocratic power, however transmitted. The weakness of human nature is seldom proof against the vanity which sees its eminence justified by its personal qualities; and fails to ascribe it to the ideal which it is employed to personify.

Then the need of occasional reversion to aggressive conduct, which a world environment of imperfect development imposes from time to time, helps visibly to keep alive the belief in, and perhaps too the reality of, individual leader-

ship. Aggression is essentially individual conduct; and its organizations are extensions and magnifications of individual power enlarged by the blind obedience of accessory energy. Even when soldiers voluntarily enter military service, it is, of necessity, service; and they subject themselves to arbitrary direction and surrender all individuality of motive, until especially directed to resume it for certain acts. And it is to be seen that apart from reversions, such as the military organization, there are mingled with the voluntary conduct, various persistent phases of individual conduct, which remain embedded in human nature and are necessarily destructive to the end. The continued presence of injurious and unintelligent life in lower organisms—the vermin, and disease-breeding creatures—cannot be received with any other conduct than unforgiving hostility. And higher species, even including humanity, still produce creatures of this naturally predatory type, whose manner of living operates in such fundamental difference that it cannot be reconciled, and must needs be overpowered. So that from day to day even the best intentioned men are called upon to prevent, or to help to prevent, wrong doing, by force. And for such purposes the most pacific communities are obliged to exercise a certain amount of interference, and to maintain a sufficient armed force.

It appears that this persistence of offense, and the necessity of meeting it by force, is made the chief excuse for the persistence of governmental leadership and control, at times when all evidences of superior governmental wisdom have vanished; but the force which a nation maintains for its own defense against enemies external and internal, is neces-

sarily under the control of its government; and when that government is autocratic the force becomes easily subservient to personal ambitions, and is used in that interest instead of those for which it was established.

As against this condition or tendency there is set up in modern political reform, certain corrective popular rights ranging from that of frequent revision of election, to that of revolution; which is seen to be a necessary incident of progress and advancement in many instances where opposition has been too long delayed. The forms of government generally known as democratic provide for continual refreshing of the governing impulse, by frequent reference back to the people for renewed authority, and sometimes even constitutionally forbid in advance the right to retain power, even with consent of the governed, beyond a limited time. This system regulates in small normal frequent efforts, while revolution corrects by large abnormal efforts. Yet the powers exercised by the chief officer of a republic may be as great as those pertaining to a king; and the occasional reference to popular will may be now, as it was of old, necessary to the continuation in the kingship; still there is, in theory and practice, a difference based upon the traditions of the respective offices. The democracy is headed by an executive not personally invested with authority except to put into effect the mandates of the people when concurred in by himself; while the king is conceded to hold office on account of superior wisdom and fitness, or because of divine authority related to patriarchal right.

The form given to authority by intellectual man, as an expression of his latest evolution in morality, limits it to what

is necessary for the purpose of organization; and evidently ignores or annuls all question of right by superiority, whether of individual wisdom or of divine inspiration, or of inherited function. It transfers not right but only power, and leaves the right in the people irremovable.

This is seen to be a process in harmony with that previous observation of altruistic culture, which indicated that control or government cannot successfully compel active virtues, but can only forbid aggressions. In this effort government represents, not the responsible individual desiring a leader, or teacher, to control or direct his conduct; but it represents the aggregate of his neighbors; whose wishes he must tolerate in order to secure their consent, and who thus express to him their wishes. He, the individual governed, still enjoys liberty, and choice of his own conduct, for his own benefit, except so far as it is agreed that his neighbors' rights are to limit them through governmental restraint.

Thus the function of true or altruistic democracy differs greatly from that of a society in which the individual transfers his liberties and rights to a common fund of activities, and looks to a paternal government not only for restraint from wrong but for direction in right action. This theory, even if put into practice in an elective form of government, would still encourage, or at least permit, the supposition that something wiser than the abstract popular wisdom forms the basis of authority; and would admit of a vacant place in the structure which divine or inspired wisdom, and therefore authority, would properly fill. Or in case it merely theorized the transfer of the collective wisdom to an elective government of limited power; it would, in its assumption of

governmental right to control right action, be socialistic, rather than democratic. But that view is undoubtedly highest, in the morality of evolution, which is induced by the altruistic considerations. Liberty is moral, in the value which lies in the fact that the responsible individual knows his needs and capacities, better than any other creature can know them. Altruism is voluntary itself, and concedes volition to others. It allows to each one that he is better able to judge and decide, than any other creature (not excepting even a government or its agent), his own proper course of private conduct. The idea of moral democracy is therefore the minimum of control, and that only in negative expression; preventing things injurious to the community. This is all that human wisdom justifies, in its latest and highest practice of politics.

The progress of the democratic idea in favor of the restriction of the governing power to the function of restraining men from activities injurious to the community, tends inevitably toward a lessening of its authority as a moral control, yet it does not always lessen its influence toward morality. Leadership remains natural to it, in relation to matters necessitating unified collective action of the aggregate. But in these the function of government is not always to lead in its own wisdom, but it is often to find a specialized leader; as when, for war, a general is found, who is preferably not the chief executive. So too the social organization for research work, prefers a specialist who is withdrawn from the business life because of his peculiar ability. Although many activities continue to be the proper duties of the executive government, they are becoming more strictly

bound to certain limits stated in the authorizations, and are evidently reposed in officials merely for the sake of convenient unification. The quality sought for such executive office is conscientious fulfilment of duty, and not inspired superior wisdom, and not even judicial capacity. In nearly all modern national constitutions judicial authority is placed apart, with emphasized purpose to deny it to the executive. And in legislative wisdom there is a peculiar quality demanded. Wisdom, either intellectual or emotional, must be the kind of wisdom which is understood by those for whom it exists, and who wield the power of election. Such wisdom as is not understood, is rejected. Wisdom, to be acceptable and to be made effective in action, must be so near the level of that of the community as to be within its perception, although it may be still above it in the matter of conception. Thus the liability of modern democracy to put into practice conduct lower in quality than the best, is, after all, right according to that principle discovered in study of altruistic motives, which requires due consideration for, and patient tolerance of, the desires of others, even when they are believed to be wrong.

As a mere matter of expediency this secures to a true democracy, a stability of government which cannot exist when a wide gap extends between the understanding of the people, and that of the governing power. As a mechanical process this limitation of power to a goodness understood by the people, would abolish the need and the right of revolution, if the machinery of representation could be made as automatic as is the design.

Beyond and below this lies another democratic principle,

which imposes on governmental activity a duty, revealed in previous study as an altruistic factor in associated conduct. This is the duty of free education. Its expediency lies in its power to keep people and government in harmony. Its beneficence is in the fact of its distribution of the advantages of knowledge, to those who are unable alone to achieve them. The work of exterminating ignorance is practiced by altruistic government with the same advantage as the extermination of disease, and is an extension of the same co-operative principle, just as that was an extension of the idea of united action against beasts of prey. And its place in social science, as a concept of duty, is only a little different from the place it begins to take as an expedient for the general good. A perception of this kind of good, arising out of existing practice, and not above the ideals of a people, is therefore, in actual life, found to be the strongest quality of leadership applicable to free peoples. But clearly this is evolution of a self-government, far removed, and essentially different, from government or education by supreme wisdom of divine origin. Clearly too, it would be absurd for a people to look for any divinely supreme guidance through that power which it daily proceeds more and more purposely, to hold under its own control. So it comes to be settled that religious teaching must be separated from the educational program of the government, and there is no moral education by the nation, or state, or municipality; it is left, as a department of religious teaching to the various churches; and is free and not compelled, following the rule, perceived in altruism generally that aid must be acceptable; and it is most unfortunately ineffective in consequence.

In modern life the present condition of moral teaching, in persisting alliance with religious precepts; produces a transient and deplorable weakness. Control in morality is then inconsistent with religious liberty and is unacceptable. Public education of the non-religious character which is found acceptable, is step by step denuded of the old morality, and administered with no substitute. Thus we see one of the necessary links in the chain of progress removed. The link which connects inherited capacity for right action in modern activity by a due training of that capacity is done away with. And this occurs at a time when public education is so esteemed that private and parental training are restrained and neglected. Such obliteration of moral teaching can only result in a loss of social cohesion. The human instinct and reason, and even conscience itself, operate most effectively when the lineal and racial life build upward continuously, and this lack of continuity is seriously injurious at the present time. In moral education, progress must be made by energies arising in the sphere of personal conscience, free from coercion, and this kind of progress can be aroused only by education.

These considerations, with others commonly known and equally strong, show that the modern conception of democratic gvernment as it has grown in the minds of free people, does not successfully cover the field relating to moral education and control. Although the paternal governments which are being replaced, were all more or less linked with duties or assumptions of that kind; political progress thus withdraws this moral aid from many individuals who need it, and although all this is done in the effort and with the effect of

benevolence, there is a visible and real deprivation of assistance upon which many emotional natures continue to depend; and we see this need imperfectly supplied, by religious associations. The functions of government thus limited are not however, and cannot be entirely divorced from the regulation of morality. It is still a recognized duty, especially of the local and municipal governments, to support and prosecute research and to disseminate knowledge, and generally to make effective the co-operative desires of the association, some of which relate to practical morality separated from religious beliefs. This involves the actual performance of such activities as are necessarily the conduct of the entire aggregate.

The national and state governments obviously must care for the relations with other nations; and the final enforcements of the awards of justice, and maintenance of law among their own citizens; and must provide for continual adaptation and revision and extension of the codified law to keep it in harmony with changing circumstance and to provide for growth and progress according to the advancing ideas of the people. But the tendency is to direct and limit the latitude of the executive government, even in these things which cannot be taken from it, by a written constitutional agreement in which the final authority is vested or rather is found in the qualified citizens.

In regard to the question of qualification for citizenship there is definite tendency toward a recognition of sane maturity as sufficient. This is the function of a steady altruistic progress in the removal from the list of disabling conditions; those of poverty, and ignorance, and faith, and

servitude. The disability of female sex, which has been classed with that of immaturity, is also disappearing. It arises in the ancient instinctive prejudice in favor of coercion, which belongs to patriarchal control; and it is continued by the prejudice in favor of strictly logical reasoning, which materialistic philosophy induces. But it utterly fails in the light of altruistic philosophy, which recognizes inherited emotion, and instinct and conscience and love, as equalling logic as factors of human conduct. Difference of sex is visibly being removed from the question of qualification for citizenship; and obviously a recognition of the feminine quality of wisdom is the reason.

The disability of infancy separates itself on other lines. The immature individual remains under the natural influence of a parent, and therefore a voice granted to obedient minors would only increase the power of a parent; while to the disobedient it would encourage ignorance.

The disability in racial difference is an important question which tends to reassert itself. It has been generously lessened and removed under the impulse of broad humanitarian feeling; and this action has shown its complexity by consequences evil as well as good. It cannot be doubted that to admit into the management of an organization, persons unqualified for the conduct required in it, is a serious loss to the community, without the gain proffered to the individual. The gain he really makes is purely selfish, or is perhaps even a gain for his own different system of conduct, with a loss to the interests of his benefactors. Such questions as the admission to full privilege of the unassimilable races of other color, are in the borderland where self-preservation has its prime-

val right of assertion. Altruistic generosity which endangers the performer fails in its remoter purposes, and it is just the remoter and final purposes which morality considers. There is in this aspect of political right not only a concrete example of human conduct in process of evolution, but one of that class which proves the rightness at times of motives of expediency.

It appears that this question of expediency will always be a factor in political organization, and the qualification in racial heredity is therefore decided separately for each case as it develops. Racial unity, or at least harmony, is seen as a necessary element of civilization of any kind; but more essential in the civilization of brotherhood than in any other. The brotherhood of all mankind is to be reached by a brotherhood of great communities, and not by a brotherhood of individuals. The function of government in the promotion of universal brotherhood, thus applies to itself, and to units like itself, and, of right as well as in visible practice, cultivates brotherly relations between governments; while it permits the individuals, and minor corporations, to act upon their free and more familiar knowledge of their own necessities in brotherhood, and their own ethical estimate of them.

While it is becoming more and more evident that collective action is more effective than isolated action, and it is self-proving in experience that the larger the unit which cooperation can organize in mutual confidence, the more effective it becomes; yet there is in moral purpose a most emphatic separation of this rightness of constructive combination, from the wrongness of its use in aggressive and destructive

rivalry. The truth that coöperation is a progressive and moral power for activity, runs parallel with the other truth, often forgotten, that it is power resting upon justice and unselfish tolerance; a power brought into being by these qualities, and utterly impossible in a system of oppression and coercion. Therefore, coöperative organizations which take advantage of a civilization which has given them being, and strength, and a free field; and then proceed to use that strength to coerce others, are retrogressive. Such putting of the immediate benefits in the way of the remoter greater benefits is evidently sordid and immoral, and consequently we see that it still rests with the governing power to assert the common law and statutes against coercion by combinations and unions. Differences which formerly arose between individuals, now arise also between corporations and individuals in regard to the old rights. Justice, and freedom from oppression, and enjoyment of property, and citizenship, and common liberties in the community, are therefore newly defined by the legislative branch of the government in laws, which are interpreted by the judicial branch, and administered by the executive branch. But the social and industrial organization proceeds to seek efficiency in emancipated activities under a government, not controlling them, but securing to them liberty to control themselves, with due regard for others, under the law common to all. Thus paternal government is properly left to the parent, and social activity to the societies which create it, and commercial and industrial organization and initiative to the units arising out of the necessities. But each and every one of these units remain subject willingly and beneficially to the higher interests of

the nation; and liable to instant check when in its own purposes it trespasses upon the rights of others. Beyond this check, which is itself constitutionally defined in the laws of justice, the government has no right moral function.

Such is the typical character, briefly expressed, of the kind of government which humanity creates more or less perfectly when the altruistic impulse controls. This impulse, and this type are mingled of course, in practice, with many other impulses, and many other fragmentary types; so that generally speaking every government, and every minor organization, shows actual conduct partaking of many or all types in different actions.

The various ideals of activity of a progressive nature complicate action as much as do the various established prejudices. Some communities, renouncing the despotic control of patriarchal form, seek to put in its place equally despotic control by the social aggregate, believing socialism the best organization for productive activity. Others, shaking off paternal government, give less heed to production, and ultimate results, and look only to a present enjoyment in common of the existing goods which are now unequally distributed, and which the community is by them supposed to properly own for equal distribution. And others again having lively perception of the value of knowledge as expressed in products, see benevolence in that form of coöperation which faithful ignorance and controlling wisdom can achieve; and so they would distribute justly not the wisdom, but the produce, by means of the old paternalism more benevolently administered.

One of the advantages of organized coöperative activity

—as compared with that individually controlled—is that it permits of regard for many principles at once, so that each may be proportionately observed by specialized units, and may be submitted to the test of selective survival. But to secure this advantage the essential principle is liberty. It is in this invitation to progress that the altruistic, liberty-granting motive seems to take foremost place in the world's organizing methods. The increase of capacity for organization, achieves the material reward in the efficiency attending greater and higher units of action, whether national, social or industrial. And a decrease or neglect of the capacity for organization is attended promptly by a loss of efficiency in the machine, and a lessening of its material rewards. In other words the happiness, comfort, wealth, and elevation of the life of a community is in due proportion to its altruistic faculty of combining its activities in mutual support, with the least possible internal resistance.

It is an unavoidable inference from facts to be noted in a review of humanity in its largest conduct units, that the highest governmental authority procurable by humanity, is simply the consensus or net sum, or aggregate, of that of all the individuals; and the highest expression of it is found in the sympathetic wisdom of representative leaders, whose ideas are expressive of the ideals of the people. The manner of choosing these representatives is a question of custom and convention. A choice by numerical majority is expedient, for the stability consequent upon the physical support, which stands behind an authority thus delegated; and is based altruistically in concession by any superior intellect, of the right of an inferior to understand the governing wisdom;

and also upon the evident fact in practice that conscientious choice, freed from personal interest, as intended in democratic election, is usually purer if not wiser, than the highest wisdom of interested power. This concession carries with it the necessity that the understanding of any proposed action, presumed to be wiser than that prevalent, shall be imparted to the community by educational methods, as a preliminary to the execution of that action; a course essentially different from that provided under the older system, in which presumably right action was imposed by coercion upon an associated people, in the light of such wisdom as lay with the governing power. It may be noted that a personal government, even autocratic, may have much of the virtue found in democracy, if it be readily changeable, and if the people governed have the right of advance public knowledge of public acts, so that the governor shall know and consider the wishes of the governed. Such a system is merely a lower development of the democratic idea; taking instinctive action, instead of reasoning its method. The essence of altruistic political reform lies in its difference with the old claim of a sacred right possessed by one individual or caste, to direct another or others by coercive control. And the evolution of resistance to this control, shows mankind standing upon the individually free conscience as the right, and upon collective responsible power, as the final authority.

Yet there are conditions attaching to the exercise of this power. The electoral right is to be recognized as a trust. It is no more an irresponsible privilege than is that of the elected representative. If wielded corruptly or otherwise irresponsibly it is void, under the regulations adopted gener-

ally, by self-governing people. Therefore, the right rests in certain functions of the individual, as distinguished from certain other functions, but barring the motives which would permit the power reposed in him to be exercised by others, he is free to perpetrate right or wrong, good or evil, in truth or error, according to his own wisdom. His position in this responsibility is clearly one in which his success depends upon his fitness for it, which implies familiarity with its conditions. When his responsible position has been created by himself or by his forefathers, he has in his experience and heredity and education the needed understanding of it. But when it has been imposed upon him; or even procured for him, without the previous creation of a legitimate desire of his own for it, there is in the privilege only a possibility; an experimental opportunity to do good, without any natural probability.

The benefits of political liberty then depend upon right perceptions and conduct by the individual, looking toward his own self-preservation and happiness, with altruistic regard for all humanity so far as that regard is acceptable. Thus democracy, the most recently evolved system of organized human conduct, is seen in all parts returning upon the responsibility of the individual, and deriving authority from individual wisdom.

This system, like all others, is subject to change and is in fact tolerant of co-existent systems having parallel authority. It is not conceivable that a system which imposes upon its wisest members the duty of regard for others, would debar them finally from accepting wisdom of any other source from which it might appear. The attitude of altruistic

democracy is receptive. It organizes for action upon all the wisdom within reach, recognizing its need for still more, and not assuming to define what part is needed and what is superfluous. Thus the belief or opinion of any constituent member is added to the common fund for such subsequent digestion as may seem due to it, without any test of orthodoxy except the common consent. The individual stands in the exercise of this right as the equal to any other man in that share in the highest evolution of human conduct. There is in this equality an isolation typical of the natural attitude at all times and places of unavoidable responsibility, and there is, in the submission to majority rule, the conduct typical of the perpetual regard for fellows in mutual support.

CHAPTER XIV

EMANCIPATION OF BELIEF

In the actual development of national life the sources which still supply and cultivate the knowledge of moral benefits, do so with steadily decreasing support from the temporal power; and positive authority over belief and thought has, in higher civilization, entirely disappeared. Religious compulsion ceased with the first concessions made by dictatorial control to the advance of altruistic freedom. And this does not appear as a loss to religion. It is natural that the teachers of modern morality should, early in the growth of liberty, perceive the inconsistency of imposing undesired aid upon an individual; and so be among the first to relinquish the practice. Yet the religious institutions cling to coercive methods. It seems as if the champions of patriarchal government had consented to abolish this power reluctantly, and only in order to retain popular support in other directions. The service rendered to a paternal government by a controlled moral religion is properly educational; in which it teaches people the rightness, real or imaginary, of the action taken by the executive; and conversely, it represents to the executive the right course as regards the people. Now when the teachers lose or relinquish their control of the people, a government which valued them only for that control has no further use for them; and inclines rather to sustain the subject people in their independence, while it

seeks to influence them by other means. And, on the other hand, a government which confessedly derives its morality from a free people has no sympathy with any sort of moral education which can only be imparted by dictation. Thus the control of religion disappears in either case.

The governments constituted in democratic fashion give attention as much as ever to the restraint of such conduct as is offensive to the majority of right living members of the community, but they seek less, and even lessening, control of a class of actions which seem to concern the performer alone, although this includes many which nevertheless have much to do with his attitude toward his fellows. Broadly this distinction may be stated as an increasing restraint upon defined crime with a decreasing regard for moral sins not charted upon the statutes. This is a logical result of the growth of respect for the individual, which demands for him liberty in his beliefs and freedom from restraint for any but definite and well-founded offences. But in thus defining offences for legal restriction, there is left a wide void where lie many offences against morality. Most of these rest by custom upon the same authority as the various theological beliefs now in serious doubt. And with these there go also those failings which consist not in positive ill doing, but in a deficiency of affirmative virtues of altruistic character, impossible of correction in compulsion or restraint.

Then again there are many offences of clearly illegal nature, which are ignored because they are small, and because it would clog the machinery of justice to attend to all of them. This condition is exaggerated by the persistence of the antique methods and privileges attaching to the adminis-

tration of justice, inherited from the ancient authority. An exclusive caste devoted to old forms, which yields most reluctantly to the demand for change, is tolerated under the influence of the conservative instinct. But this fostering in reverence, in any field of effort, of an established usage after it becomes obsolete, permits temporarily a very imperfect realization of the new purposes; for the sake of sureness in the advance. In the civil law courts of modern life this is seen abundantly. The actual administration of justice is not in its methods properly representative of civilized wisdom. It is slow and expensive and wasteful of the citizens' time. The visible progress in it, however, tends to correct errors of omission, and continually improves the quality of justice, and the degree in which it is accessible to daily life; and tends also toward a further assurance of liberty in morality without state control. The democratic law naturally moves in the same direction as the sense of the people, omitting religion from the things it may control; and does so knowingly upon principle and not out of inability to do otherwise.

We thus see not only the executive and the legislative but the judicial departments of government relinquishing all contact with religious matters; and we see the educational culture of morality, abandoned by government, devolving upon institutions whose machinery was created under a system becoming obsolete; and whose authority is discredited by the loss of temporal power formerly enjoyed, as well as by a too obvious obsolescence. And it seems that this transition, like many others, involves difficulties not proper to either the new or the old conditions.

It does not appear that the exclusion of morality and re-

ligion from among the things to be legally controlled is due to any lessened appreciation of these subjects. Many of the institutions devoted to them persist, in unofficial status, with an activity, and with a popular support, as sincere and as effective as before, and even in some cases with reviving influence, as they come closer in touch with the aspirations of their congregations.

The exclusion of religious morality is due to a lack of popular agreement, and to a want of uniformity of public opinion, wherein public service becomes impossible, since public control must needs offend some, in any effort to serve others.

Respect for individual right and opinion makes it now impossible to induce general compliance with any ancient sectarian customs in which a large number of the people have lost confidence. The old forms and expressed standards of morality, as they exist in those codes, have their living principles so inseparably mingled with obsolete law and dogma; that agreement is no longer expected. Thus the situation of doctrinal organization, becomes analogous with that reached by a physical structure, which needs regeneration rather than repair.

Such a process is natural and not necessarily a misfortune. There is indication of a young morality legitimately succeeding the old, and there is every evidence that it will crystallize into concrete form. The general desire for declared standards of conduct which arises in their usefulness as vehicles of educational precept, exists in altruistic philosophy just as in coercive, but mutability is demanded. The specialized aptitudes of the teacher, whether he be a maker

of dictionaries or a priest, tend now as before, to develop too much faith in the codes he has made or adopted, so that he refuses to believe them imperfect or transient. All religions visibly tend, in cultivation, toward elaborate theologies, devised in the effort to defend indefinitely, and maintain perpetually, precepts which are properly of fugitive value, and must in time need regeneration.

This tendency to fossilize in structure is not peculiar to any age or to any cult. It is seen in philosophy as in religion, and is equally evident in the civil law. It is clearly a failing of humanity at large, and may well be attributed to the same natural necessities which establish death and re-birth in all forms of life.

It appears therefore, natural and normal, that rigidity which has so long persisted in control of the moral codes, now needs readjustment almost amounting to reconstruction; and calls for eradication of error which almost threatens collapse.

The saving factors are however powerful for reconstruction. There is still alive the persistent aspiring faith which revives in new form with better ideals when imperfect ones expire; there is the instinct for altruism which is the fundamental virtue of the morality of evolution; and is the same altruism which was imparted to humanity in the greatest faith known to the world. It has preserved its essence in reverence through all vicissitudes; and now holds to it unswervingly while forms and doctrines fall to pieces. The instinctive sacrifice of love, which is greater if forbidden, continues to attach itself to its old ideals, and to reach out for new interpretations, and to achieve its own reward.

Truly there is a heritage in which the character of morality is long founded so that it need not be called untried. The change demanded is in fact one of purification and extension rather than of rejection.

CHAPTER XV

EDUCATION

THE situation of a free citizen of a modern nation is in regard to morality abnormally difficult and responsible. The human being thus proceeding unguided and with faith swerving from the old revelations, stands in this matter in a position of isolation without coöperative support. Unless he can perceive his destiny, and influence it by his will, he must suffer. He will not be relieved from the moral law of Nature because of any present ignorance or past confusion in regard to it. Consequences still accumulate upon his every action, and he is fortunate if he knows this and realizes the duty of a search for such law as can be understood. This search was never more active than now, and never more modest. It is proceeding in a reverent consciousness of the narrowness and littleness of the scope of understanding, and with the confession that even this little scope, discovers but a changeable truth.

The complexity of life and the frequent need for prompt action make it impossible to survey and discuss, in the light of reason, all the motives and consequences of a proposed act, and so reach a judgment of its right or wrong character. Intellect and understanding, aided by memory of experiences, and by educational knowledge of the experience of others, all go to make clearer the law of conduct, and the consequences, and even to establish determinations and habits

fitted for certain contingencies; yet as against the limitless possibilities of circumstances which arise moment by moment, such reasoning is often useless. The trained intellect of the court of judges, bearing upon a question stated in simple form, requires many days of reasoning under favorable conditions, to decide the right or wrong of it. It is not possible for a human being face to face with an emergency to exercise the power of reason as a guide to conduct. And we have seen that the laws of democratic government teach, and care for, only that which the community demands, in restraint or for common benefit, and leave untouched lawful activities and the guidance of the individual in his own concerns. And the religious and moral teachers, although still in active effort, are in their ancient standards often far removed from sympathetic understanding of these concerns, by their desire to teach great principles. Where then shall the individual look for guidance in the little things which constitute daily life? And especially the new daily life which is unlike the old.

Associated life is not an immediate result of the meeting of units. It is not a spontaneous, or even rapid amalgamation by inorganic affinity. It is a slowly evolved intricate organization, requiring many successive generations of individuals, and many long lineages in which to develop.

The individual sharing the benefits of this organization does so by contribution to the common fund of experience and enjoyment of the accumulated wisdom derived from that experience. His access to this accumulated wisdom is traceable in three chief ways which are heredity, education and conscience; the two last named being in some sense

extensions or specializations of the first. It is apparent that in his own experience he will normally extend the knowledge which he receives, and transmit an abstract of the thus increased total to his successors.

Heredity has been already noticed in the study of elementary conduct and responsibility, and a knowledge of its workings must be presupposed. As it affects the present subject it is in general, the fixing, for the benefit of the lineage, of habits and abilities and physical structures acquired by the individual, and the abandonment of such as cease to be beneficial. By fixing advantages in the lineage, is meant the equipment of its successive individuals with the advantages thus secured. The wonderful repetitions of structure and abilities, can only be mentioned here as observable facts, of which the study is only just touched upon by modern knowledge. But the understanding of it is made easier, by the new perception that these successive individuals are not newly made lives, but only the same continuing life, deserting a structure which it made for itself, and making, by repetition of the process, another better and newer. It is however the fact and not the method which concerns us here. It is seen that such structure as is found useful and good in sufficient continuance of time, and is cultivated by use, persists and is transmitted, from father to son, and so on. This applies to the organs of intellect, and to the aptitudes and abilities for conduct dependent upon them. This heredity, already seen as an instrument of comparison for right activity, assumes new importance as the vehicle or the transmission of the higher powers of voluntary conduct.

Parental education is evidently a process securing continuity of that particular intellectual work for which the physical structure of the offspring is simultaneously adapted. Education in its primary form thus appears as an extension of heredity. The normal lineage, presenting the greater life in co-existent generations, constitutes a unit which enjoys the coöperation of maturity and age and youth. It maintains itself by a develpoment which does not lose continuity in the death of the successively aging individuals. The intellectual growth of the parent, the products of his knowledge and experience are, by education grafted upon aptitudes in the son especially able to receive them; and normally they are especially suited to his conditions, although in times of migration and change, these advantages are lessened, both in fact and in value, and mere adaptability may become a better quality than any settled habit. But this is transitory variation. The main stream of knowledge, descending through the generations is continuous, and presents to each the experience of the one preceding it, and continues in education the benefit of heritage so long as the older individual retains reasoning power, and the younger remains receptive. Obviously infancy and youth so dependent as that of humanity, is but badly equipped if its aptitudes molded in one type are trained in another which is foreign, or are not trained at all. We know that the dependence upon training of a human infant, is such that without example and assistance, speech and morality and reason do not develop. It is evident that if the existence of these faculties depends upon education their quality must still more certainly be so dependent. Broadly then it is the

physical structure and organs and aptitudes which are inevitably inherited, and these limit the possible intellect by their capacity, original and of growth; but they do not transmit the intellectual heritage. This is imparted separately by the process of education—the primary and fundamental elements being derived from the parents who are in control of the tenderest and most impressionable years; and the more complex and artificial being superimposed by the community creating them, chiefly through its machinery of public education. Thus the individual in maturity becomes heir to the accumulated store of selected knowledge, first of his lineage, and next of his race; and to that knowledge he proceeds to add his own experiences, and to take his place in the organized aggregation of his fellows.

It is evident that in a democracy where patriarchal authority is weakened, the teaching of the essential altruistic morality must become a matter of public concern. And even more is this apparent when a population born of foreign parents, often of very moderate education, is growing up with the public schools as their only source of knowledge. Under such circumstances it is undoubtedly incumbent upon the government to undertake the duty of teaching morality apart from religion. The supposition that morality is a religious subject is incorrect. Religion is a relationship toward the Supreme Being. Morality is a relationship of a man towards his fellows and the material universe. The ancient religions, notably the Hebrew, the Buddhist and the Confucian, covered the subject of morality chiefly because the wisdom which was competent to express one was also needed for the other. They taught also sanitation which

in these days we are accustomed to see elsewhere cultivated. Moses was not only a teacher of religion and morality; he was governor and lawmaker and judge and health officer. But we have ceased to look for all these faculties in one authority, and as we have cared for education in other sciences, so should we care for education in Morality and Law.

Some of the energy and time given to the making of laws should be diverted to the duty of teaching them to those who are expected to obey, and especially to teaching their rightness, and their foundation in a purpose useful and beneficial to the law-abiding citizen.

It is not just to those who have few to advise them that they should be presumed to know the laws. They are entitled to be informed; that is to say to be taught, and it is amazingly negligent that a community which wishes its members to live in obedience to law, should fail to take the most obvious first step toward that end, which is to explain to its children what that law is, and why it is. A course in morality in the lower grades and a brief course in the edicts of the criminal and civil codes, in the upper grades of the public schools, would save much of the expense incurred for police and justice and jails.

It is becoming more and more apparent that jails and the fear of jails do not succeed in reforming wrongdoers and do not successfully deter the juvenile delinquents who will soon become mature criminals. It is clear that some other system of prevention of crime is urgently needed.

Everything indicates that the remedy is education in morality imparted to the children in their earliest lessons.

CHAPTER XVI

CONSCIENCE

The modern civilized community which has achieved conditions approximating those lately reviewed, that is to say a condition tending toward or culminating in altruistic democracy, consists of individuals allied in groups, each representing a strain or lineage normally continually growing in knowledge and ability. These groups are inter-related by blood, and bound by common intellectual training, and by political association, in varying degrees, so that knowledge is diffused sufficiently to sustain a general community of understanding, and to these individuals, duly qualified by correctness of motive, has been traced the authority which defines right, and sustains the organization in that right.

There is to be found in every and all of these reforming communities a marked appreciation of independence of thought. Their appreciation of liberty has sometimes arisen in circumstances from which independent protest could be the only way of release, and their emancipation from control has found new uses for that aptitude for independence, and a continued respect for personal convictions.

This respect goes so far that it allows and recognizes a right of freedom from subjection to any but the most neces-

sary of conventions, and it is extended occasionally to grant immunity from the penalties and obligations even of established and accepted codes. The distinction necessary to procure for conduct this consideration is not in the conduct, but in the motive. The motive must be one of conscience. When a responsible human being sincerely believes a religious declaration, his fellows in altruistic association are inclined to grant him all possible presumption of right, and even strain their customs to permit him to act according to his belief. Non-conformity to custom is, in effect, a form of that tendency to variation, out of which has arisen the most valuable of new institutions; and we still perceive in its workings the creation of benefits, by unexpected successes of things first supposed by opponents to be useless or impossible.

Conversely the conscientious scruples in which individuals have protested against control, have been so frequently justified by riper wisdom, that they have generally provided the impulse which has procured that emancipation of religion from the dictation of the state, which has been surveyed in previous chapters.

An authority quite different from anything granted to selfish interest, is therefore accorded to that impulse which is expressed through conscience. While self-interest is admitted as a just motive, it applies to the affair of the individual; and the community, if not opposed to it, is not greatly interested. But conscience is a motive, in which the individual may be opposed to the community, and then is so placed by disinterested convictions, feelings, and beliefs, which are not of his own making or control, but which are

the product of affections and emotions; and of heredity and education; distinguished from his logical reason and self-interest and arising in something apart.

The community recognizes in this motive a thing superior to the conscious intellect of the individual evincing it.

This conscience is the function of some power which in practice invests the human being with a moral authority for his own actions, which is a proper test of their rightness, and which, exercised in collective wisdom of democracy, reveals at once the authority and guide and restraint of government. This is the faculty which, having upset the old codes, still reserves the right to upset the new; and bases that right upon the fact that it established them in a knowledge never perfect, but always aspiring toward perfection.

Conscience is not authority itself; it is a connecting link between man and the infinite. Its beginning is in the first volition of the first life. Its possible development is not limited except in the full understanding of absolute good, which may be considered as its ultimate unattainable end. Conscience is not infallible, although it is unfailing. Its power at any time will depend upon the plane of attainment in all knowledge from which the individual views his purposes, and by all knowledge is meant unconscious knowledge as well as that which is conscious. Conscience is the belief of the greater immortal ego.

The search for a fixed describable goodness, as the object of the authority in conscience, is therefore as futile as that for a fixed code of active conduct. Nay, more so, because the compiling of codes, for the guidance of others, in government and education, is justified by the acquiescence of

immaturity in relatively superior wisdom. But even this does not constitute a right to suppress the conscience of maturity when in application to personal religion, whether based in comparative knowledge or in ignorance. The conscience thus privileged is then a faculty of a different value in every person.

The differences, which do not constitute a right of the superior to control, may, however, imply a duty to impart the knowledge for the common good. The degree of altruism shown in the educational sharing of wisdom will determine the homogeneousness of the association, and of course identity and harmony of purpose will increase, as differences of conviction thus disappear. It appears that conscience, although not to be forced, is still amenable to conviction by reason. It is common knowledge that later education strongly influences conscience, and in so doing modifies and extends the previously acquired faculty. Similarly individual reflection, and reasoning upon one's own experiences and perceptions, will build up more of this power of discernment, and found habits upon them. But these later acquisitions are less stable and less trusted than the older ones. They are tentative and experimental at first, and are acccepted more fully when proven by experience, until they become settled and habitual and, in final form, instinctive. Here then is found the origin of the older judgments of conscience. They are simply those which have become intuitive, by ancient, and continuing, and repeated experience; that is to say which have continued in use so long, as reliable guides to the conduct by which ancestral generations have survived, that they are the ready involun-

tary inferences of the mental machinery from the causative event. They have become automatic, in the same way that the processes of walking or of breathing have become involuntary, although in lesser degree, because of less age and greater diversity. The method of preservation and transmission is a study in evolution. It must be assumed here that such a method does indeed physically link and unite all the ancestral generations with that now existing. The process of natural selection, as now understood, could alone evolve conscience, and further could explain its two forms of judgment, one intuitive and instantaneous, and the other reasoning and receptive. The continued survival of those individuals most fit in their perception of what is right, and the corresponding rejection of those creatures less able to perceive it, will evidently select creatures of certain aptitudes and preferences for that line of conduct, even if their preferences are fortuitous. These, when they are psychological faculties, will indubitably be accompanied by a certain physical organization, which heredity will carry forward, and so endow new generations with the capacity; and even some of the perception itself. Then later association develops this faculty (as any other) in extension of the heredity, in the manner seen in previous observations of heredity and education. The inherited aptitude is charged with the parents' experience, and their inherited wisdom; and then the community wisdom is added in greater volume but with lesser force; and upon this the new personal experience builds self-formed convictions. And clearly those perceptions which are oldest, and longest fixed in conscience by heredity, can only be those relating to long enduring and fundamental

goodness or value. Hence their instant readiness as well as their deep-seated persistence. Some of them antedate reason itself. And clearly too, the more recent acquirements are of a lesser rightness, usually less positive, as well as less rapid in action. There are apparent exceptions to this last observation, in such zeal as a reformer may show in new action against overwhelming forces, evinced with all the persistence of the oldest instincts. But it will generally be seen that such fights are really only new in form, or application to the particular issue; while intrinsically they are of the most ancient origin. For example the self-sacrificing contests for new forms of religion, are really efforts on behalf of that old principle of liberty which goes with secret thought. And again the revolutionary struggle for a new government may be but a recrudescence of old ideas of liberty many times previously cultivated, and only recently suppressed.

Conscience is for the intellectual being what instinct is to the lower animal. It is in fact instinct with the products of self-conscious reasoning superimposed. It is a summary of all heredity, and of all education, and of all idealized effort in aspiration, applied in response to circumstances. It is intuition enlarged, so that its rapidity of decision is preserved and is further influenced by the innate desire for, and recognition of, rightness. It is a faculty cultivated by, and necessary in, a hostile environment, wherein questions of vital import must be answered without hesitation. Conscience is good because the hostility is evil. Intuitive conscience solves instantaneously problems of right and wrong, which, if submitted to reason and logic; would require such

time and effort as to render the decision useless. Conscience in this function affords an impression of right and wrong, the sum collected in instinct from all past experiences. But it is rapid only when compelled. It is modified by present knowledge, and takes account of so much of reason as time and circumstances permit it. It stands clear of wrong, even when in error, for its rightness is not in any absolute quality, or in any standard, but in its own sincerity of effort and intention. It rests upon the things which have endured so long that their impulse has become habitual, and therefore, if certain things of environment change, conscience is right to distrust them. Its function is ultimate good, and it does not require justification by present success. Conscience is conservative. It belongs to all time, and covers all at present desired of the future, by memories of all worth remembering in the past. It is the involuntary act of perception of obscure right and wrong, which was acquired in continued voluntary acts of conscientiousness. Its cultivation is part of the highest development of human understanding in that it relates to the things so remote as to be imperceptible to the cruder sensibilities; and it operates with a wideness of view unattainable by reasoned logic. Conscience is the never sleeping mentor of morality.

Freedom of conscience is one of the most precious rights which a democracy can secure for its citizens; and conversely it is a privilege for which a liberty-loving people will preserve its altruistic government from the domination of bureaucracy and from dictatorship of every kind.

CHAPTER XVII

FAITH

FAITH is the sister of conscience. Faith is the intuitive acceptance of the rightness of another person or being, just as Conscience is the acceptance of the intuitively seen rightness in one's self. Faith enables an immature judgment to achieve the heights of conduct indicated by a greater one. It is a manifestation of educational power. Receptivity of educational ideas is the natural attitude of psychological immaturity in the youth of highly cultivated beings. It is the mental counterpart of the physical aptitude, which is inherited. And it is observable that in certain natures the receptivity remains active in mature life. Now when such a nature is addressed by appeals which convince overwhelmingly, there is at once apparent all the strength of belief; and all that activity of conscience which goes with older knowledge. It is in fact a repetition in later life, of the confidence of the child in the supreme wisdom of the parent. The effectiveness of such control (for such it is) depends, first, upon the physical aptitude of the pupil, and next upon the fitness, and the disinterested sincerity, of the teacher, which appeals emotionally to the deep-rooted instincts of altruism. The instinct for faith is formed in beings well endowed physically, who perceived their inferiority in judgment and are ready to enlarge it by attachment to superior wisdom. Such creatures sur-

vive by their fitness in securing benefits, just as other creatures survive by securing physical protection. And in the survival there is the rational development of that mental attitude which made it possible; which is the aptitude for faith. There is also a great influence for the conservation of faith as a qualification for survival, in the sexual relations; and equally of those species in which one sex is distinctly differentiated from the other in general strength, and power of defense. Here again an instinct developed by survival, in life much lower than the human, persists into humanity with strength not lessened by the acquirement of intellect, but ennobled therein; and with importance not decreased but intensified. In the great dependence of motherhood and infancy the situation of helplessness, which we formerly saw necessitating sacrifice and perpetuating altruism, must evidently also maintain faith and faithfulness. For these virtues, which hold individuals together in goodwill in ordinary life, are the grand indispensable virtues of that alliance in which the greater life of the lineage acquires periodically its new tenement of flesh. But the confident trust in the bestowal of necessary aid and protection, is only a minor part of the function of faith, as cultivated in the marital union of human beings. The possession of intellect, and the knowledge of good and evil, adds to the instinctive desires of animal nature, an appreciation in humanity, of qualities higher than the purely physical, and indeed sometimes developed at the expense of the physical. The mysterious attraction in which a man and a woman find impulse to that supreme association which shall mingle their natures in their off-

spring, is much more than the merely animal affection or attraction of affinities. It is for each a conscientious act of faith, if the highest degree of happiness is to be attained. For evidently the absence of faith and the presence of distrust not only lessen the happiness of these individuals, but they lower the strength of the alliance as a means of regenerating their heredity, and so neglect the remoter and more moral purpose, and degrade the process of procreation from its human possibilities in evolution of virtue, to a lower plane where passion and animal qualities dominate. It follows that faith, meaning that form of it which gives one person confident happiness, by a leaning upon the loyal support or alliance of another, is a quality cultivated and evolved by the sexual alliance. If there be any advantage in it, there should be, according to the laws of evolution, a visible survival favoring those who practice it. And such is undoubtedly the case. Although the perpetuation of a race may be possible without it, and although reproduction is to some extent so effected, yet the added qualification arising in the aptitude for this virtue, and for its supplement, which is trustworthiness, are sufficient, in the selection by nature, to give an ascendancy to the races of men thus favored.

But the aptitude for faith is not fundamentally a sexual virtue. Although thus kept alive and transmitted to offspring it is cultivated in all the relations of life and becomes in secondary form a facility for education, and thereby a means of participation in the benefits of such wisdom as is not logically understood.

And the aptitude for faith is not to be considered as belonging especially to one sex as a complement of trust-

worthiness in the other. The tendency to differentiate sexually, and to specialize virtues which are thus developed, is generally accompanied by a physical redistribution of all aptitudes to both sexes. Although some exceptions of course exist in regard to aptitudes specialized in one sex it is the function of sex to continually merge these differences. Thus faith and truth and love and courage and pride and persistence, and the civilized perceptions of such qualities as appreciation of music, or of color, or beauty of form, which may be most naturally acquired and cultivated by one sex are, through union, transmitted to both. Beside the differences arising in environment and operating in greater force, appears the fact that in the descent by sex, the whole race which began its similarities in a community of origin, is continually reunited by alliances. Sex thus maintains in evolution the community of character necessary for the activity of faith, as well as selective exclusion of faithlessness. There is thus a physical compulsion of that distribution of attainments which altruism shows to be desirable.

Faith, like other virtues, exists for its beneficence, for the sake of the good it will bring to those who practice it, and thus it becomes a necessary part of the character of any race civilizing in altruism. And although it is a direct aid to unity of purpose, as thus developed, yet it is evidently of an even deeper benefit as an educational factor. In its direct action it merges in the faculty of conscience, and is not a separate source of authority or of new inspiration. It is the means by which conscience is rapidly endowed with perceptions. The knowledge commanded by the individual intellect is slow, but the knowledge by faith when a greater

sympathetic intellect inspires confidence by its altruistic attitude is immediate. This is however a manner of influence of belief lacking in the stability which true full education secures. It is a provisional adaptation for securing unity in those conditions of inequality which it is the purpose of altruism to remove. It is properly used, by the higher intelligence as a vehicle for education in that permanent reasoned knowledge, for which it makes the mind ready; and in which the pupil's conscience escapes control, and becomes independent in its own wisdom, and then does in knowledge the things first learned by faith.

But faith has another form, lower than that sublime and perfect trust, which is the bond by which communities become possible and upon which all organization depends. This is faith by the individual in the sense of duty of his fellows, single in personal relations, and collective in the aggregated activities. Faith of this order is the virtue which makes industry and commerce constructive and cumulative, instead of destructive and retrogressive. Good faith adds to organized power, and bad faith lessens organized power, and the organizing power, at the same time. Every act of mutual trust in commerce or industry achieves not only an intended gain, but is a new added strength to the community in its development of power to act in unison in future; and every act of deception is not only the injury intended, but it is a detriment to the community; which becomes less powerful and less efficient by the loss of harmony and destruction of confidence. Faith is the complement of altruism. Moral conduct must always be dependent upon faith.

CHAPTER XVIII

CONCLUSIONS

It is not necessary to the present purpose to analyze exhaustively the elements of conduct. It is preferred to reach an early conclusion by a sufficiency of evidence. Admitting then an imperfection, it is submitted now that enough has been done to make evident the fundamental value of conduct in consequential effects, which are just, in relation to the continuous greater life which enjoys them, and the establishment of Morality as the perception of these consequences.

The general review of the natural impulses of active life in the world, and of the attitude toward environment of the creatures enjoying voluntary action, leads to the inevitable belief, that conduct is subject to a system of natural law, which has been evolved at the same time, and from the same sources, as the activity itself; and that there is an unavoidable relation between all conduct and its consequences, which compensates good or bad action. In fact the award of this compensation in its final completeness, is the thing which decides what is good and what is bad. This decision is a process operating in nature, with only that degree of supernatural control, or wisdom, which is evidenced in the original principle of energy of progressive evolution and of life. But while it does not appear that additional supernatural control is needed to complete a judgment of any conduct, yet on the

other hand it does not appear that supernatural control is deniable. The discoverable facts simply make conduct accountable in a certain way without it, and seem to indicate that this accountability is of the same nature as the supernatural is conceived to have; yet the secrets of the source of energy and of the origin of life, lie beyond our knowledge with infinite possibilities still unrevealed by nature.

There appears in this unknown point of departure all the potentiality of eternal supernatural control, as unqualified as if the control reappeared at every subsequent act. And the idea of a regulating function, primarily imparted as the essence of the life, and self-sustaining in all evolution with it, is in harmony with a conception of an Almighty God, which is higher than the conception resting on the belief, that a divine wisdom continually controls action by necessary repeated personal intervention, which is characteristic of an intelligence of lesser prescience.

But even though the intervention of supernatural power is a possible unknown factor, and though that unknown factor remains unpresentable except in supernatural terms, yet the understandable and purely natural system, which appears as resting upon it, can, and now does, provide for a compensation of conduct. To facilitate the study of these inferences, they are now collected into a series and declared, in such order as to show the relationship by which they make a system. This order is somewhat different from that in which they discover themselves to experience, and different again from that in which they offer aid to right conduct. In systematized order these principles may be recited as follows:

First, The impulse which produces in matter the life of the world reveals a progressive quality and power forever higher than any conception or definition now within human reach, and therefore in finality unknowable.

Second, In the process of this unknown power, there is visible, continual progress in the activities of matter, from unconscious reaction, toward perfection of conduct consciously conceived. This is a progress under knowable laws, which proceeds by the continued addition of experience, and by survival of successful conduct, which is called evolution.

Third, The evolution of humanity with self-conscious understanding, still proceeds, and is accountable under the same impulse which empowers all lesser life for its lower progress.

Fourth, Humanity having achieved self-consciousness acquires added power, and added accountability, and a new incentive in ideality; and any degree of progress in organization, and any new knowledge of natural laws, or of the good and evil made distinguishable by them, is always an endowment from which aspiration reaches for still higher ideals, therefore the future will at all times promise an advance which passes beyond the conceptions of any present period.

Fifth, Life thus progressing in organization is continuously living through the generations, by the undying survival of the actual physical plasma or life substance, which, apart from any supernatural endowment except its fundamental condition of life, is in its nature potentially immortal.

Sixth, Death, penal and retributive in the extreme, is the death in sterility in which the life plasm dies without issue

and the lineage becomes extinct. Death, primitive and partial, by which the lineage is weakened, is proportionate to the insufficiency of activity against environment, but is corrective, and selective of survivors in cumulative beneficial effect.

Seventh, Exhaustion or decay of the bodily structure, and hostility of environment, causing injury of its materials, necessitate the repeated abandonment of old structure, and the transfer of the lineal life plasm to new bodies; and this transfer originates and develops altruistic sacrifice, which arises in the gift of advantage from parent to offspring.

Eighth, Normal death of the individual is not a penalty nor is it a break of the greater life. Death is the natural method for a necessary periodic rejection of structures defective or obsolete, from change of environment, or by age and decay, usually structures from which the greater or immortal life has, in normal circumstances already passed into its newer forms.

Ninth, The preservation of the greater or lineal life is the fundamental motive of moral conduct, and is the justification or right, of self-preservation by the individual, which is therefore restrained, for ultimate benefit, by a regard for the rights and activities of others mutually interested.

Tenth, The consequence of right conduct is enjoyment continued of the greater life of the lineage, with participation in its higher achievements, and with, for self-conscious humanity, a prospect of future participation in conditions higher than imagined in any present conception; and extending toward the infinite.

Eleventh, The consequence of wrong conduct in the ex-

treme, is extinction of life; and of wrong in lesser degrees is a proportionate delay, or a lessening of power in the contest with the hostile environment, in which the lineal life may be numerically weakened; or its term may be shortened or threatened, pending relief by increase of virtue; and a consequence of minor degree of wrong is the delaying of the attainment of higher conditions.

Twelfth, The lineal life in its immortality is thus the true ego and subject of conduct. The race life, originally in unison, and later divided into separate individuals as a result of growth, is naturally allied in a primal community of interest, which affords the foundation for altruistic association, in successively higher organizations of coöperative unity.

Thirteenth, The limitation of opportunity, begetting in growing communities a competition for advantage, causes some to enter into destructive rivalry, and then into predatory habit, in a struggle for survival, which, as a system of conduct, may be temporarily successful.

Fourteenth, In the progress consequent upon growth predatory life is self-limited by its own destructiveness, while altruistic life continually increases its adaptability, and enlarges the capacity of its environment.

Fifteenth, The primitive phase of parental devotion exhibits that principle of preference of the lineal life before that of the individual, which secures continuity of existence.

The superior vitality of the altruistic type of the greater or lineal life constitutes an ability for survival, which overbalances the destructive value of the opposing system of aggressive self-maintenance.

Sixteenth, Human conduct in successful life is thus physically based on an altruism which is natural in a being of defenseless and perishable structure, and which is indicated and conserved in a helpless infancy, and in the sacrifice of motherhood. Humanity is only predatory and aggressive under the compulsion of adverse circumstances, or in the habitual fear of that compulsion.

Seventeenth, The power which in high development perceives the far reaching effects of conduct, and in that conscious knowledge qualifies the present impulse, and thus founds morality, is a complex of inherited emotions and instinctive perceptions and of education and reason called intuition and conscience.

Eighteenth, The degree of perception of the more remote, as well as of the immediate, effects of conduct, is the measure of the quality and perfection of morality; and this perception is necessarily imperfect, and right conduct is a comparative term.

Nineteenth, The intellectual perception of morality, and of the virtue of altruism in conduct, is the basis of human organization for mutual support in the struggle against hostile environment. The practice of altruistic coöperation has achieved the organization of higher units of activity, in many degrees; in which human individual life acts with collective force, and with participating profit. This power for organizing in harmonious unity achieves material and moral benefit, and leads toward ideals beyond reason's present ability to define.

Twentieth, Right conduct, being that which has fitness for the contest with circumstance, therefore changes as con-

ditions change and is not to be permanently defined by any fixed standards. Conduct is good only by fitness in comparison with other conduct under the test of survival of the most fit.

Twenty-first, Codes and other standards of conduct exist properly only for the mutual limitation of activity, to prevent injury to others; and for the educational transmission of knowledge, and for the declaration of accepted laws of morality and of convention, which are subject to continued revision.

Twenty-second, Veneration for codes and respect for authority is a virtue, properly balanced and corrected by regard for independent conscience, which is the sense of right and wrong by an intuitive knowledge, or sub-conscious memory summarized instinctively. In this independent conscience lies the faculty of progress by variation of conduct-standards; and the right to change or continue such standards.

Twenty-third, Conscience is therefore the human authority for individual activity, whether self-controlled, or imposed, or imposing others. Its rightness is not in any absolute quality, but in its sincerity in guidance of conduct which at the given time and place is the best discernible to the individual concerned. But conscience still owes altruistic concession to others, whose perceptions are based upon other experiences, and in coöperative activities must defer to the collective conscience, which is a mutual cultivation having regard for mutual benefit.

Twenty-fourth, Conduct is thus governed and compensated, in a just reward of proper consequence to all the acts

of life; covering every motive and result, however simple or complex. All differences of degree of goodness, receive consideration of value in terms of quantity, or are compensated in terms of time; the greatest reward being continued life in progressive fitness through all time.

Twenty-fifth, The award of compensation for conduct, whether beneficial or injurious, is made to the life of the lineage; and such of it as comes into the control of an individual is a property in trust, which, however, is at his disposal. In his discretion he can appropriate the life to the use and enjoyment of his somatic body; or he can conserve it and its endowment, to the continuing lineage by which he receives it. The right guidance of the performance of this trust, without undue appropriation, is the function of morality.

The elucidation of these principles, by analysis of conduct as it is practiced, ends the work properly within the scope of this effort. There is still lacking a promised explanation of the imperfectly stated facts in evolution, by which heredity and material immortality, endow the life plasm of the lineage; and this must needs receive a separate treatment, which will in a sense complete the ground needed for a broad conception of the conduct motive.

BOOK III

Life in Evolution

CHAPTER I

CONDUCT IN EVOLUTION

THE purpose of this, the third section of the inquiry into the morality of nature is to present in plain language certain facts selected from the announcements of the explorers in Geological and Biological Science, and to show in these facts a real and physical basis for the principles of moral conduct previously discussed. The newly found truth of physical evolution has recently received most amazing confirmation and assurance in newest biological discoveries. Indeed these things, visible to our eyes and convincing to our minds, entirely change the aspect of life, from that afforded to the philosophers who gave us the old cosmic and moral systems. They are not generally known, are not fully understood by the everyday reader. They are so new, and, as usually presented, so abstruse and unclear, that they remain to a great extent the mysteries of a learned class. Yet these new facts are of the very foundation of our being, and the basis of our motives and purposes in conduct. That is why they are here presented anew. It is done as simply as possible, in a continuation of the method of directing attention to knowledge already at the disposal of the average reader, and suggesting certain aspects and meanings belonging to it; and by deducing from the scientific parts of such

knowledge, the inferences which concern us all. It is not a study of geology or biology which is here desired, but a study of morality, to which biology is a needed stepping stone.

The preceding analysis of conduct has shown a definable natural system or order, which compensates voluntary activity. It appears that the effect and purpose of conduct is primarily the preservation of life, and secondarily, still to this same end, the acquisition of abilities and powers suited for the contest with a hostile environment. Upon these main facts others depend which may be summarized as follows.

Changes in environment compel changes in conduct and in equipment, and, for these purposes a process of renewal, and of change, or evolution, of the physical organization is acquired by the creature; these are the functions of propagation in likeness, of variation, and selection, and of death.

The break in that existence which is transmitted from parent to offspring; is only a suspension of somatic activities, and not a break in the activity of the life plasm itself, which is potentially immortal. The break is, for the somatic body, bridged by heredity; and even in the physical organization which does die, progress is continuous. The conduct of this ever changing, ever progressing life is duly compensated by its greater or lesser success in achievement of racial fitness. The most fit races renew indefinitely their lease of potential immortality, by reproduction of a sufficiency of numbers; and the less fit races suffer, by individual weakness, and by extinction of life in many branches, in the consequences of imperfect conduct. The transmission

of life to structures thus selected and preferred, is therefore determined by the conduct achieved by the structures.

It appears further that in this evolution of conduct there are two dominating factors, characterizing types—coöperative, which is to be viewed as the fundamental productive factor; and aggressive, which is a provisional destructive factor. These two meet, in the contest for comparative superiority. Conduct begins altruistically in the harmonious early life of creatures in association, and selfishness arises from rivalry in overcrowded or antagonistic environment, and persists only under that condition. All conduct is a direction, or control, of activities showing a mingling in different degree of these two motives; in which the tendency is ever to return toward the primitive unity of purpose, because it is the most beneficial and successful of the two systems. The preferment and re-establishment of this superior system is progress in the evolution of conduct, in that it facilitates the achievement of life maintenance. This progress is restrained by the persistent hostility of rival organisms, which is reaction. Reaction arises anew in nature so that although in part overcome by goodwill, or exterminated as irreconcilable; it is ever recurrent. But as part of a hostile environment it is seen acting with nature's circumstances, as an incentive to alliance and brotherhood between those related in the higher system.

The ultimate theoretical purpose of altruistic progress in conduct, which is the completion of the unifying effort, and the ending of all antagonisms in a perfected organization, is at infinite distance; therefore the practical aim appears as the inclusion in the alliance of relationship, the greatest

possible number; and the maintenance of hostility toward the least possible number; so, that self-preservation shall be accomplished, not only in a most perfect phase, but with the least possible waste of effort.

It appears also that all these phases of conduct develop naturally under survival and selection without self-consciousness, and when conscious mental power is attained and is applied to a consideration of conduct, it produces a new motive superimposed upon all the old ones without cancelling them. In self-knowledge, and perception of cause and effect, it becomes possible for, and therefore incumbent on, man, to conduct himself with foresight of consequences; instead of in a blind persistence of habit, which is corrected only in survival after suffering. It appears this foresight is the knowledge of good and evil; in it lies the perception of morality. Morality requires the foregoing of any present advantage to the individual which entails injury to the greater or racial life, or a loss to the higher organization of humanity; and the preferring of such activities as promise ultimate greater benefit, rather than those of transient lesser gratification. The development of moral sense results in the recognition of certain principles as guides to right conduct, to be followed when the full consequences are not to be foreseen. These principles are more enduring than individual motives, yet, as rightness of conduct depends upon conditions which change; it must change with them; and therefore the precepts, and even the principles, are subject to change accordingly. It appears therefore that a fixed standard of conduct is not attainable except in ultimate perfection; and that humanity, prompted by the

desire for good, must continually seek it in the perceptions and conditions proper to its own generation. In spite of occasional reaction there results an accumulation of understanding, which is progressive not only in its manner of moving, but also in the things achieved; and finally this continued elevation of the goal to which conduct aspires, and of the system and method by which it is approached, are, in their nature, of infinite possibilities, in continuing elevation of moral purpose and the approach toward ultimate perfection.

The principles thus discovered, although affording no fixed standards or rules, are yet calling for allegiance to higher ideals beyond present comprehension, and this allegiance is the essence of moral progress.

The identity of interest of the many related individuals and the continuity of their lives, was inferred rather than proven by consideration of conduct. There is however a physical basis of proof of the facts which were stated in the earlier study, and which may here be taken up for detailed investigation.

A study of human conduct shows clearly that the acts of the individual, and the consequences of them, which are not explained sufficiently by observation of that individual alone, extend into, and influence other individual lives in two distinct relationships. First it is seen, that a co-interest or share by many others in the direct consequences of action, becomes a material consideration in the impulses as soon as volition appears—and secondly, there is found a joining in physical responsibility with the present individual, of many individuals in direct lineal descent, past and future. This

relationship of successive lives leads to the perception of their real identity, and thus a view of continuous life in many successive generations is seen, and suggests a solution of the problem of the law of conduct. The life which apparently begins and ends without logical completeness, and without justice or sequence, is seen to be but a fragment of a greater life in which all these qualities appear. We therefore proceed to examine more deeply this new aspect of mankind. To understand human conduct we must understand humanity physically as well as psychologically, and the inquiry extends into that wide field of biological science in evolution, where the unit of activity is a race or species, and the terminable life time is an era.

Here we find life to be potentially immortal in actual material continuity, and we find its immortality to be the consequence or reward of certain conduct which we call right conduct. But we find much more. It becomes clear that life, thus continued in right living, reaches into higher and always higher physical phases, and with each phase becomes eligible for further promotion.

This revelation can be found and read without any inspired assistance. It stands in the natural world as the essence of its life's normal function, independent of any supernatural force, unless we so call the original and continuing fiat of life.

In Evolution nature writes the open book in which the physical element of this knowledge appears. The evolution of life-forms is the repeated adoption, by an undying living substance, of changed organizations and capacities, suited to changing conditions, and their retention in apparent sta-

bility so long as they remain the best suited. It is the continued activity of a principle by which living matter, in its organization, preserves always the beneficial results of its past experience; and, starting from these as a base, adapts itself to new conditions by adding new abilities to the old. By its operation a creature at any time is always the product of its original self and all the succession of its former selves, and of its present environment. It must be perceived that the environment alone does not evolve the creature. Were it so all would be alike in like environment. What makes the new creature is the environment plus all the previous experiences of the life in question, plus the life itself. Thus, in the same environment, many different creatures arise because they stand in it with many different pasts. One, with a long successful past plus the present, is a very different creature from another, with a barely surviving past, plus the same present. Evolution is thus cumulative in effect, and in this fact lies its power of progress and inspiration. By it progress is addition and not substraction, and is, normally, from lower to higher forms and capacities. A creature in evolution is potential for future conditions, without being committed or destined to any of them. In this last quality evolution is entirely different from the development which is the execution of a previous plan; as when a plant arises from a seed; or when a colony of old type rises from an individual of that type. In these cases the process of development is along foreordained lines, and is nature's repetition of a previous operation, because the new conditions are sufficiently similar to the old to promise success of former acts. This is not evolution in the special sense,

although there may be some small element of evolution superimposed upon it. Evolution is always and inevitably new because it always adds. It is the product of what was new yesterday into what is newer today; and its tomorrow is never determined until that morrow comes. It seeks fitness for the future only by grasping fitness in the present; and the fitness arrives usually because the future comes related to the present just as the present is related to the past.

Such a conception of the purposes of higher conduct leads to a conception of a scheme or system whose laws are as far and long reaching as the life they regulate; that is to say potentially immortal; and less only than the infinite.

CHAPTER II

EVOLUTION IS PROGRESS

THE word Evolution has come to mean, in modern biology, especially the process in nature by which higher forms and more complex organizations of life are attained, through the changes in the life organism, which builds up or accumulates its new characteristics. Evolution physical is the result of efforts to better maintain and improve existence. At times conditions more or less variable or hostile stimulate this activity, at other times when the environment of a race may remain favorable and nearly constant, this stimulus seems to disappear. At other times crowding by increasing numbers causes competition among individuals, each striving for maintenance or self-advancement. Under these different incentives variations appear; and are adopted and cultivated, and fixed by use, so that new useful features are made permanent, and old useless ones are abandoned; and the creature slowly changes, and in the long course of ages new varieties and new species are evolved and established.

This process is proven beyond question by modern science. There are still some persons who dispute it, but they are those who do not study. It is to be examined here as an established foundation upon which to base philosophic reasoning in regard to conduct.

In the course of this destiny in evolution, humanity pursues a career from a beginning unknown to an end unknown. Our knowledge of the present and recently past portions of the sequence, is a comparatively exact science; and it is a science of causation, and so we may extend it by logical inference backward into the remoter past, and forward into the farther future.

Man does not enjoy alone the privileges of this progress. All nature participates in it under laws which appear to be universal. But man stands as a creature which has emerged from the lower degrees, and who has attained, in psychology, a plane so much higher, that to careless inspection it appears as a different dispensation. Yet the law can be found only as one law for all. It may be that man owes his superiority to a beginning, or an early favor, not encountered by his lesser rivals, the remoteness of all the beginnings is such that only the dimmest of light reveals it, in the uncertainty of conjecture. But uncertainty is not in nature a ground for rejection or disbelief. Evolution is a process itself based always upon uncertainties. The impulses which prompt new and higher activities, and which adopt and confirm new forms and organizations, are seldom infallible. They are the successes selected by actual trial, from innumerable other impulses which failed. And this is just as true of human intellectual impulse as of animal impulse. Although the

intellect does give a judgment in advance which is better than unreasoned instinct, yet it is often in error.

The exact sciences reach only to a very limited volume of knowledge. Reasoning and logic by induction achieve only few absolute certainties. They operate with a degree of wisdom small in relation to the absolute; and so unreliable that it seems to be part of the natural course that it shall be perpetually supplanted; and so small that always the unknown will stand away farther and greater.

But the mystery of the greater future knowledge is not simply a fascinating metaphysical marvel, the fact that new knowledge waits still unknown, stands before us as a condition to be faced every new day, and indeed, it is so faced. And notwithstanding the inability of philosophers to tell us what is coming, we who live on, do so by meeting the onrush of existence as best we may, according to our ability, using such fragmentary understanding of it as we can get. In the absence of positive knowledge, we must and do act upon beliefs, with more or less faith, and with more or less wisdom. These beliefs vary in force and in usefulness, from the grandest inspirations, revealing mainsprings of life, down to the merest guesses of badly formed impulse. But such as they are they are the basis of human conduct. Therefore the absence of perfect knowledge of all things does not relieve man, nor any living animal, from the necessity of decision and action, nor from the consequences of his conduct. He must proceed or stand still, upon such wisdom as he finds available. Conduct, therefore, cannot look for or demand infallible guidance, nor can the knowledge of it, or of its laws, be exact knowledge. If considered

as a science, it is the least stable of all sciences, always subject to change, in anything and everything except only its basic principle, which is life dependent upon right doing.

The laws under which evolution erects upon this basis, consequences of accumulating value, are evidenced therefore in a process which is comparative rather than exact, and aspiring rather than wise. The right doing by which a creature continues to live while environment varies, results in a growth in experience, which is imperfect knowledge, of an unstable, fast changing nature; and in this growing knowledge, the possible upward progress shows no dependence upon exactness, and no tendency to become fixed. A philosophy which pretends in the light of any day's knowledge, to define or declare the value of the abolute good, is evidently absurd; for tomorrow will always add new experience and knowledge, and leave the old imperfect. And a philosophy which seeks benefit only in things which are provable, is more absurd; because it ignores the greater part of human motives; which are not conclusions, but are only desires taking effect in hope or in faith. A philosophy which can help humanity to live, cannot afford to deal with only a part of human impulses, it must treat of all, and must give the due consideration to every factor.

This truth becomes more clear when the higher consequences of conduct are viewed, in the progress of evolution of life forms, as they rise adapting themselves to conditions, by continued increase of efficiency. This rise is being accomplished now as always before. It is being achieved by civilized man and by barbaric man; and by living creatures, in world's known and unknown; by vege-

table life in its lower order, and in short by all life. It is curiously evident that, in evolution, the surviving changes, compelled or secured by hostility of environment, are necessarily changes for the better in fitness for that environment; since any change for the worse is penalized, and if bad enough is exterminated, and upward progress is the normal progress.

It is difficult to understand the far-reaching import of the continuance of the uplifting evolution principle, when applied to the past and future of progress. Man must recognize himself not as a stable, enduring entity, but as a thing changing like a mist wreath, or a cloud without form. The hopes of future beatitude that man has put into words from time to time, have never been near to adequate expression of the promotions which await him; and they never will, for every advance develops a higher perception of those to be. Man, as man, may, nay must, now believe that his succession will be as far above him, as he is above the cave dweller whose dawning intellect reaches only the beginning of reason. In the face of the revelations of recent science, it is idle to deny or ignore the fact that modern man is really the successor, through evolution, of a progenitor of lower animal type. Notwithstanding the prejudices against such a belief, resting upon misreadings of the crystallized truths of older revelation, all the realities discoverable show that civilization fades away in a backward review, wave by wave, lessening in degree, although with some startling interruptions—until its beginning appears in barbarism. And behind this barbarism is animalism down to its beginning.

But this backward view toward lowest beginnings means that from them there has been a vast progress to the higher present, and above all it means equally a hope for a still higher future.

Dogma may continue to assert the inability of humanity to change, yet in dogmatic evidence, as elsewhere, human progress is recorded, and to the meanest intellect it is open and accessible. In historic review of humanity's religious beliefs, each of which may be taken as a conservative expression of the best perceptions of infinite wisdom, of its time and place; there is to be seen continued progress, which must be in man's growing capacity, since it cannot be argued that the Divine source has improved. The civilization of Christianity, with its basic principle of brotherhood in active altruism; is vastly superior to the previous Theisms of aggressive type, with their bloodthirsty justice of retribution. Yet this type of Theism evolved a Monotheism which was noble compared with the Polytheistic beliefs and the Pantheistic cultures of self-indulgence with a basis in sensuality; and even that stood high over the preceding superstitions which worshipped idols with service of slaughter. The great religions of the East, Brahminism and Buddhism, show, in their own historic places, advances over the previous ancient wisdom, resembling that of Christianity over Paganism. And even Islamism which appears with defects which belong to the ante-Christian period, was better in its theology than the idolatry which preceded it.

And again in regard to natural philosophy, and to the exact sciences founded in truth or logic and acute perception, the present age surpasses all the historic past. It is

probably true that inspiration and intuition are today less effective, relatively, than they have been; but that is a temporary condition, due to the revolutionary progress in objective knowledge, which has upset and discredited so much of subconscious inference; but which will, without doubt, become the basis for a higher inspiration in due course.

All the records, and they are many, show that older wisdom was usually lesser wisdom, not only in that it ignored some subjects later studied; but it was also wisdom of lower order in that it showed an intellectual power of lesser training, producing beliefs, and approving errors, which to later thought were obviously wrong; and even in the limited light then available should have been rejected.

For example, the minds which could continue to attribute the supernatural control of all things, to the erratic lunatics of the Greek Mythology, or to the childish deities of Egypt, are obviously and incontestably inferior to those of even the populace of today. And the priests of those cults would appear as children when placed beside those who in Israel, recognized a justice-dealing Jehovah. We recognize certain principles of wisdom as being old, and remaining common to all breeds, as elements of their strength; but the weaknesses in old beliefs measure the intellectual grade of their teachers, more clearly than the truths do. The great truths, noble wherever found, some of which all ancient religions possessed, are true today, and some are no better understood today. It is not to be said that old belief was without true value; on the contrary it is clear that the old, was, when new, usually better than its preceding belief.

But in the admixture of truth and errors which always makes the fact, the examples of error characterize the mental power of the races and show the old lower status, and thus prove progress. It must be conceded that progress is not regular and even; that an epoch-making wave may reach abnormally high, and be succeeded by a recession; and so on. It is even possible that these visible oscillations are as ripples borne upon a larger series of waves; that a previous era has seen civilization higher than ours, which has passed to leave only an inheritance in a physical brain-power of men. It may even be granted that cataclysms of nature at some time may have affected life so overwhelmingly as to spare only men whose intellectual ability was great for the task of self-saving. But such is not probably true. The geological record is consistent in the evidence that the progress of evolution was fairly even, and that man appeared after the earth had assumed the present degree of stability of conditions, which permitted of his development in a series of advances. Perhaps the best place in which to commence a study of evolution is in the Geological record. But what a stupendous prospect is there opened to our view! It is idle to contemplate the geological periods with a pretense to comprehend their age but we must make an effort to realize their immense capacity.

CHAPTER III

TIME AND THE GEOLOGICAL RECORD

In approaching evolution we must be prepared to contemplate time of vast duration. Let us begin the consideration of time in its relation to ourselves; and note first the effects upon our physical nature, of the events of five thousand years, as they can be observed in history. In this time we find that some races have progressed from barbarism to high intellect, with some changes of head shape and of facial expression; partly perhaps procured through admixture with other blood, while other races have changed so little that they seem to have remained essentially the same. There are men living today who would serve as models for the portrait-like baked clay art of thousands of years ago. These have stood still. Some muscular forms and bone structures have changed slowly under changing conditions, and some are almost constant. But the change is little and the constancy is great. The resemblances of races astonish as much as the differences. We see that the descendants of ancient civilization, for example the modern Greeks or Italians, have, in common with the black African savage, a bone structure which their vastly different lives have differentiated only in a moderate degree. They have acquired differences, yet when we regard the probability that

they have been developing apart for ten thousand years, or perhaps fifty thousand years, the differences are trifling compared with the similarities. The knowledge reached by observers of the effect of changed conditions upon men and animals, and even our common observation of their effects upon our own race folk, prove that such changes do occur. Yet we see that in the historic duration time does very little in comparison with what was done before historic time began.

Now let us inquire how long it must have taken to so differentiate from a primitive stock, the black African on one hand, and the white, pure blooded Saxon on the other. Or, if we believe that they are not of similar stock with common origin, let us inquire how long it must have taken to produce each of them from two somewhat similar original stocks, under somewhat similar environment. Whichever way the similarity is caused, we ask now only a question of time; the two handed, five fingered, erect walking man of black skin is undeniably related in his descent, either through a similar environment and law, or from a common ancestor, with the two handed, five fingered, erect walking white man. These men are both recently evolved, in comparison with the reptile, as geology proves. But measured by man's time and remembering what five thousand years has done, what a stupendous age is needed to breed the white stock, or the black, one from another; or both from the brown, or whatever it was.

Well, that time has been as freely and easily available as the few hours of yesterday were available for our work. What matters time in eternity? We men stop to think of

time, when something is to be done, because our time is limited; but all things done in evolution, are done without prevision or regard for the next deed, or the next need, or the time for it. Each cause does its own work, and no day is considered, and no morrow is provided for, and no future is foreseen. There is a common error in the supposition that by evolution, nature in one age prepares for the next. No bit of evolution ever appeared except to meet already existing circumstances. In this there is no anticipation. To produce a white or a black man was no part of nature's scheme until those colors arose in the circumstances which made those colors beneficial. A man is black today, not because it is now best for him, but because in the past it has been good for him.

Now if these details of color and so on are the work of ages, enduring hundreds of thousands of years; how long has it taken to settle, in each slow changing type, the bone structure, the muscle plan, the digestive organs, the skin and the hair coverings of man. We may fairly say it must have been many hundred times as long.

The chief obstacle to a clear conception of evolution is the misunderstanding of time. The human mind in ordinary habit measures time by a scale so small that it is incapable of expressing the periods in which evolution works. It is as if an ant should describe the Atlantic in terms of its own foot lengths. The Mundane Era of seven or eight thousand years is a mere foot length of the geological. Wise men have said in many languages, that a thousand years are but as yesterday, in the work of creation, and we all repeat it with poetic concession, while we let its meaning slip away.

Now the newest revelations of modern wisdom tend to make emphatic repetion of this old truth in its most extreme form as a literal fact.

In order to understand the scheme of the world evolution a thinker must get an emancipation from the day and year and century and epoch in which he lives, and review time as a ground or matrix in whose infinity a period of great length and a period of small length are alike infinitely little.*

The time of geological record taxes the comprehension. In a serial list of the species of life which have been found in fossils preserved in the earth, man appears only as the occupant of a single period in a single recent group. His period of presence is so small comparatively, that varying phases of it are ignored, and below him are ranged, in space many times the size of his space, a series of many hundreds or preceding species of animals and plants. These fossil remains all lie in the earth in their order, so that the older beds of earth have older and simpler forms of animals; that is to say the beds of earth which must have preceded new beds, because they lie underneath, and because they contain the material out which new beds were evidently made; also contain the animals out of which the newer animals were made. The more simple in evolution lie beneath and the more complex above.

The facts of evolution are accessible, and they are too important and too amazing to be carried in a mere sum-

* Recent estimates of the age of the existing archaean rock structure of the earth place it at fourteen hundred million years, and the duration of life at eight hundred million years; and the age of mammals at sixty-five million years.

mary. For a reasoned understanding of life and conduct, they must be known in a fullness accessible only by appreciative study. The modern sciences treating of biology afford a volume in which we may learn the general adaptability and flexibility of all life forms. We find organized living things continually changing in form by variations which are without end. We find these variations often rejected after a brief tolerance. Some have served a purpose which has ended. Some have served apparently no purpose or have even been detrimental. Others have been beneficial and we see them recurring, and growing in use; descending to offspring from parent, to be tried again in a new generation. And then after many generations we see such new features apparently settled and confirmed, in the type which is normal. So long as they are profitable, these new features may be expected to continue; yet we see that hundreds of generations can only provisionally fix any form. The length of neck and foreleg of the giraffe is the inheritance of innumerable generations of tree-feeding ancestors; yet it would, we know, slowly disappear if tree feeding ended, and if innumerable generations of progeny found bush feeding good, they would develop again the moderate neck from which it was formed. And so it is of the fleet-running machinery and way of living of the deer or horse, which could lapse into the inactive habit of the cow, if many generations of lethargic life made the fleetness useless. So again of the strong winged birds, the carrier pigeon and partridge and wild duck. Their flight is for their way of life; and their wings, which make it possible, would become as weak as those of tame fowls, in even a few genera-

tions of disuse. These abilities of animals are acquired as the product of needs, and are in evolution sustained by the same causes which made them, only to be relinquished when they cease to be useful. The flight of the pigeon and the speed of the horse we see year by year increasing even beyond nature's standard as man's urging permeates the incentive. And as they can be developed, so too we know the cow could be evolved into the fleeter type of its wild stock, if man or nature made it advantageous to its racial life, and so we know the hen and the farm duck could be bred into strong flying fowls, if such habits were demanded as necessary to fitness.

The most notable effects of evolutionary changes under the special influence of man are perhaps seen in the amazing variation of the dog. Animals of this species vary in size at least a hundred fold, yet the dog of a pound weight and another of a hundred pounds, are of the same fundamental type, and preserve biological likeness as creatures of one original stock, although they have reached such differences that cross breeding is impossible. But this question of cross breeding is no longer an acceptable means of defining difference of species. Many different species, as by man classified, can breed together, and have fertile progeny; and many specimens of admittedly single species cannot. The fact is that fertility in sexual union as a test of species, indicates a newer classification, and does not aid the old methods. Many so called different species merge one into the other imperceptibly; and others, where the differences are perceptible, a link which has become extinct, has previously connected them. The similarities of certain sheep

and goats, are as striking as the difference of the dogs. The carnivora again, illustrate the imperfection of artificial classification, the leopards and tigers and their kind, show many creatures but a little apart, which are fertile in union.

The differences, which in historic time under man's observation, have been seen to arise or merge or disappear, in the form and organization of animal life (and even more in vegetable), are such, that it is clear that distinct species do so arise, and probably have always so arisen. The lack of continuity, in the existing, and in the geological series, is easily understood. The forms which were transitory, being produced by fast changing circumstances, would most probably disappear, while those which were sustained by environment long lasting, became more numerous and enduring, and so more likely to leave enduring records. These were only a few of the many experimental forms, those selected by nature out of many experiments; and preferred because they fitted their conditions, like seed cast upon cultivated ground. Between these favored forms were many whose fugitive efforts were only stepping stones from one type to another; and in their quick disappearance we have lost the evidence of relationship. Such a process still continues, or would continue if circumstances favored it. Suppose for example that all the varities of living dogs were exterminated by human custom or demand, except very large and very small; and no dogs were bred except the mastiffs and the toy terriers; and suppose that the influences which discriminated against the medium sized animals continued to operate against any new tendency toward such size. These two types of dogs, already fairly established,

would appear in a very few generations as species more distinct than many of those now so classified.

Now with this glimpse of the evolutionary process in living types still in mind, let us turn to the geological record. This again invites most faithful search, yet we can only allude to the essential features, and must assume a familiarity with the subject on the part of the student. The generally well known position of the rocks of the earth's crust is a wonderful inspiration for, or confirmation of, the arguments of evolution.

Of course the evolution of inanimate matter is the primary record of this great object lesson. The masses of ancient stone, deposited by the primeval seas, upon parts of the earth then covered by water, to be later raised into hills and plains; are plainly the direct descendants of the still more ancient granites, which were formed when the melting furnace of energy cooled enough to change them from fluid to solid condition. And still later rocks are as surely seen to be built of the debris of the intermediate ones, which, once beneath seas, had risen again to where torrential rivers tore them from the new made hills, and spread them in the beds of lakes and oceans. Alternate rising and falling of the land seems to have been repeated many times, so that over and over again the land at the borders of continents was submerged. It is probable that in the early ages of cataclysmic action, this work was done more violently and more rapidly than now, but it is not necessarily so, time was not lacking, and haste has no place in evolution. Fragile things preserved show that delicate forms lived and grew, and were overwhelmed and buried, without destructive

violence, in many places. Moreover, the earliest life is entirely fragile. Be that as it may, we see today a process of the same nature. Although it appears that there are mountains which were never submerged and oceanbeds never laid dry, that the ridges of great continents hold their places, and the depths of the great oceans; yet the fragments of granite debris which continually drift from the highest mountains need only time to abase them; and the seas to which they drift are not infinitely capacious, and in due course must become less deep, even from this cause, which is not alone in that effect. Natural action, which continues or interrupts the process, does much now by gentle force. At places it is well established that the land is slowly, quietly sinking, perhaps a foot in a century; so that human intelligence has not perceived it until a few years ago; and only now do we realize that even that rate, in a thousand centuries, would submerge many a country into a geologic laboratory. Some of these places so sinking, are on a shore where great rivers carry the detritus of a continent. There we may and do see the process of rock making. The sea, where, a little time back (geologically speaking) was shore, is now filling almost as fast as it sinks with a blanket of earth-debris. And upon this will be piled more and more, until a pressure of millions of tons, and a heat which that pressure generates, will renew the solidity of the mass, to be perhaps slowly raised again to Alpine crags, and to begin anew the gravitating journey. Now the sand so settling at this day in the stillness of bays and lagoons, is full of living things, and of their shells and skeletons. They are being covered up day by day. When they reappear, in thousands

of years, they will show to the intellectual beings, in actual, visible form, what the life of this age was; and it will be different from the prevailing life; as we know because the life thus revealed now, by old remains, is different from ours. This story of elementary geology is simple but is not to be passed as waste of time. It leads to marvels.

The simplicity of the process being realized, its reliability can be felt; and the fact now to be emphasized can be considered with less doubt. This fact is that in the beds of debris, which are revealed older and older, as we go deeper and deeper; the life relics are found to be, in backward progress, simpler and simpler. These older beds would of course present most frequently durable forms; if fragile and durable were mixed in similar proportion. Yet as we pass from one strata to another some of the most durable forms disappear first. We find in certain deposits great bones and teeth, and moulds of scales, and prints of feet, relics of the ancestors of elephants and elk and bears and other modern animals and fishes, and deeper we find bones again more primitive, the bones of quadrupeds of lizardlike form, and of birds also lizardlike, but there are no more of the massive bones of elk and elephants nor anything like them. And again deeper we find reptiles, with wings and without them, but no more mammals. And then still deeper the earth is full of fish forms, with and without vertebrae, and of many forms of motile organ, but never a wing or a leg—and deeper still are shell fish and worms, and creatures of simplest form; and deepest of all, where the sediment lies in oldest beds, upon the Archean fire made rock; the eozoon which is known only vaguely, from a mass of sup-

posed shell substance. A consideration of this sequence drives the unprejudiced observer to the conclusion, that the reason the later forms, such as the quadruped skeletons, are not found in the old debris which has preserved crustaceous shells and worm molds, must be that there were none there to be preserved. No other theory is presentable. If there had been any such forms they must have endured in some places, among the many which reveal more fragile things. Yet there are no such examples. It cannot be that we are mistaken as to their possible contemporary existence, or their comparative durability among the crustaceans and worms. These early types persisted, with some modifications, which do not affect their geological durability, and we find them later along with mammalian relics. We find that after lizards appear, lizards of one kind or another continue, and lead up to the lizards we now see alive; which are not in detail the same, but are clearly descendants, modified as we have seen living forms can be modified. And so we see each form persist for some time, and merge in others nearly resembling it. A reference to bird forms as the most striking example may close this discussion. The birds are, in fossil records, traceable backward until their ancestors appear with only the beginning of bird form as we know it. They are seen as lizardlike creatures whose feathers are almost as scales and whose wings are but aids to leaping. Such forms are only remotely like our birds, but when these things are found coincident with the disappearance of birds which approximated to these lizards, we may suppose that they are the progenitors of the birds. Let us examine the possible alternatives. If the birds, which appear at a certain

stage of geological history, and are never discoverable in earlier stages were not produced from creatures of earlier stage, how were they produced. Was it by direct miraculous creation? And if the direct miraculous creation be supposed, why is there the close relationship and similarity to some type and form previously existing? And why is it that always the new form is of complexity a little greater than that in the previous forms? But even the supposition of a miraculous creation does not preclude the idea that the new form might be made by a perfecting addition to an older one. This theory could fall in with the facts. The fault in such a theory is that the new miracle is superfluous and useless, when the far older miracle of original creative force stands evident and undeniable.

Reviewing the history written in the rocks chronologically we may summarize it thus. Beginning with early life which has left no fossils there arose a sea-life of algæ and shell fish whose remains are the first recognizable. And mark well the fact that there is no relic of any other life discoverable in this old strata.

The shell fish of simple forms are followed by others more elaborate, crustaceans with means of locomotion. Then appear primitive fishes, followed by amphibious animals which are the first to leave any trace of life on the land. Life evidently began in the sea, and the later land life was evolved from it when sea animals came out of the water, and gradually took to more and more of land life, until they were able to live entirely out of the water. These amphibians were followed by animals of terrestrial habits which began to show the bone-structure of more recent

times. At the same time plants and trees appear, and insects. Next the amphibians develop into forms known to us by fossils of great land reptiles. The trees and plants become more advanced and early primitive types of mammals and of birds appear. The mammals become more numerous and more highly developed as the reptiles become fewer and smaller. And at last animals and plants of modern types are found in the latest era (and not earlier); and in the latest period of that era remains of man appear, together with those of existing species of animals and plants.

Between the distinct orders are found numerous forms by which they merge one step from another; the later from the earlier—just as today we may see the amphibious frog develop from the distinctly aquatic tadpole. There are however many gaps where no links connect. This is to be expected. The record has been often destroyed or suspended for long ages. One of these gaps occurs between man and the highest of other mammals. The apes and monkeys do not supply the connecting link. Man, erect standing and fast running, upon feet which are radically different from hands, with large development of hip and thigh, and comparatively small power of arm, is of structure widely different from the nearest ape, and the intellectual faculties of even the lowest races of men show a still greater gap. It is notable that man appears somewhat abruptly in the geological record, and very late. This might well be due to his having developed for ages in some favorable place, such as a large island comparatively free from enemies; a land such as might have preceded some of the Australasian archipelagoes, where the relics have not

yet been explored. It is to be supposed that much light will in future be thrown upon this question. Meantime we find nothing to deny the possibility of man's origin in evolution from a lower form of life—nothing necessitating a miraculous intervention by a Deity who desired to change his original mandate.

From such a supposition therefore we return to our geological evidence and finally regard the marshalled array of life forms, progressing in advancing types of higher and higher organization, broken by losses but never by reversals; and we accept the conviction that all the later life is descended from the earlier, and all the more complex life is evolved from the simpler, partly in a direct upward evolution and partly in specialization indirectly without novelty of structure. The change whether constructive or merely adaptive was made by a growth so slow that it cannot be perceived in one generation or even in a hundred, and yet the thousands of generations needed, occupy in the record only a short chapter. Yet why should this slowness perplex; one does not see the tree grow, yet it is two feet high for the father, and a hundred feet for his grandchild, and the child does not disbelieve when the grandfather says, "I planted that tree two feet high."

It is not to be doubted that all the characteristics of animal life, including those of humanity have been slowly formed by each generation adding to an accumulating heredity, an imperceptible trifle, as the tree adds to its form by new growth. The enormous time needed for the development of present man from his earliest humanity, is a mere trifle of time in that of the geological record; and the evo-

lution of that earliest human type from primal life, is the work of a stupendously greater time; and yet this is truly but as a yesterday, in the time available for nature's creation.

If this conception of time can be mastered the way is open to a comprehension of evolution.

CHAPTER IV

CHANGE IS NORMAL

After the idea is adopted that all time is available, a belief in evolution may be regarded as depending more upon the question whether any change is possible, than upon the later questions as to the effects of change. If the student can observe, first, that infinitesimal change does occur; and next, that such changes can accumulate, for many generations as easily as for two; then evolution may become clear to him. A study of any recent science books can convince one of these facts. It may be briefly noted that changes, to become fixed (as far as anything is ever fixed), must be long persistent, and that fixed or established characters are slow or quick to change, according as they are long ago, or recently, acquired. And further it follows that nothing is stable absolutely, but that it is only a question of new need, whether new change shall be adopted. Now the occurrence of change is an observable fact. Investigators differ as to how the changes arise, whether by mere accidental variation or whether by response of the creature to the demands of environment, but it is generally agreed, and undoubtedly true, that among the changes so begun, those which persist, and which therefore now concern us, are those which enable a creature by increased ability, to maintain life; sometimes

to maintain it against growing adversity, or against competition of its own kind; sometimes to promote it or maintain it better under nearly constant circumstances. If the effect of a change is beneficial, the creature will prosper more for it, and those deficient in it will prosper less; and so two groups may be formed, and separated, except as they merge by the interbreeding which sexual reproduction provides. In time many or all of the race or group will have produced, or adopted by blood relationship, the improvement, and it will become established by persistent use and need; and those who have it not, will either lapse into separate place as an inferior variety, or will become extinct if it is of vital value. Another fact corelated is that disuse of an endowment for a long continued time will, by withdrawing the stimulus of activity from it, allow it to deteriorate and even to disappear. Examples are abundant showing a kind of progress in certain desired abilities, obtained by a morphological change which is regressive. The foundation of the single-toed foot of the horse by exaggerated development of one toe of each foot, into strength and hardness of material, is at the sacrifice of the others, which, being unused, become slowly atrophied, generation by generation, until some disappear from external view altogether. Geological specimens of horses of antecedent form are well known, and they afford examples of the transitional form of foot, when the toes were not so fully transformed, the change being in course of evolution. Also familiar is the change in the human foot under civilization. It is well known that savages, and even some civilized people, use the foot bare, and with much use of the toes for prehensile and grasping

purposes as in climbing; while other men of the less generous climates having for some few centuries used boots, and ceased to make prehensile use of toes, have atrophied and modified them to a perceptible degree. They still serve as a flexible terminal of the foot collectively, and still have for that service much effect, but their separate activity in grasping is markedly less.

The natural weather resisting coverings of the body too, the skin and hair, have lessened in effectiveness of that sort, in proportion as they have been protected, and the skin has gained in sensitiveness. The muscular development of jaws and neck, and the bones to which those muscles are attached, have become smaller and more refined, as their usage becomes less rough. All these things show a waning of certain powers and structures which however must still be called upward evolution. And in the higher animals, including man, there is of course continuing evolution of constructive effect. The brain size and capacity have been greatly increased in those races of men which have intellectual eminence.

Now if these changes can be visibly made in the historic period, what may be supposed to happen when that period shall have been repeated a hundred times, and what shall we expect of a hundred thousand such periods. That is exactly what we must consider. That is what has occurred, and is now recurring. In the ages we see these small changes adding item by item, and then epoch by epoch, until no doubt whatever is possible that all the present creatures of life have been so cultivated from the simplest forms. It becomes evident that man's period upon earth is a long and

unknown one, although as man of his present form, it is a recent period indeed. A thousand feet height of geological strata of rocks and sands and earths lie in plain view for us in many places. Man's part of that section would be in fair proportion only a few feet at the top. Below that small depth not only man but all the present existing forms of life disappear, and forms that are found, such as three-toed horses and gigantic elk and mastodons, following the relics of creatures in transition from aquatic habit to those of dry land, show that changes of enormous import have occurred as mere incidents, in a world of continuous change.

And while these changes occurred in the forms of living things which are preserved in the earth deposits, and these earth deposits themselves were accumulating in amazing depths and thickness, it can be seen by the manner in which life relics lie in them, that life which then existed led an existence not wholly unlike the present; that is to say there was peace and plenty for fragile things; and long periods passed without catastrophe or violence, so that gentle currents drifted over delicate shells, and wings of butterfly texture flew in summer airs, and foliage opened and flowers bloomed where storms were as tolerable as now. Things as frail as ourselves lived and died, and were covered by drifting sands, in a manner which could only come to pass slowly, in a world of self-sufficient nature, which was not a mere world of violent formative process looking to our period, but was then living its own fair destiny as the world is doing now.

Lastly let us face the full truth which we have so far only looked at afar. The age upon age and change upon change

have been sufficient in duration and extent, since life first appeared, to develop every form in existence, by different lines of succession; from the simplest possible microscopic unit—some invisible molecule of carbon and hydrogen and nitrogen and oxygen and some other things unknown—which became colloid and cell and polyp, and fungus and plant, and worm and vetebrate, and man, by simple growth in evolution, and we of proud vain humanity are merely one of the products of that process. An understanding of our life and own right to live can then be sought in this conception of what we are.

CHAPTER V

DESCENT OF MAN

It is not to be supposed however that man or other highly evolved forms are necessarily descended from lower forms which are now existing or even from those geologically known. This is a popular mis-conception of evolution which has done much to mislead. If we could trace backward the ancestry of man, to a time when his mental development might be approximately like that of the monkeys of this age, we would probably find him differing as much from monkeys of either that or this period, as he does now. The bone structure of man is that of a tailless curved-spine creature, which has walked and run erect upon upright thighs, and grounded feet, for many, many generations; while most monkeys are crouching, four handed creatures of flexed thighs, and with necessary tails, and usually incapable of a truly erect attitude or of speedy walk, while even the tailless apes which can stand nearly erect, have the long arms and distinct arboreal fitness of monkeys generally, utterly different from that of ground walking humans. The human foot and leg are more characteristic (in their indication of most ancient erect walking habit) of humanity, than the hand or even than the head. Both hand and head approximate in the highest apes and lowest humans, but the human foot has no such parallel. Man's

fleetness and grace in erect movement, and his sheer inability for quadrupedal motion, indicate long-established bipedal habit. His general æsthetic subtlety of form indicate an evolution of muscular machinery to the stage of a finished product. And those things are supported by his very deficiencies, in their indication of the relative antiquity of the human form, in its present typical character. On the other hand the monkeys, by their lack of æsthetic quality in form, and by the variations in this form, and its responsiveness to environment, shows relationship between their numerous varieties, and, in that relationship, a gulf of separation from humanity. The Simians generally are new and responsive rapidly evolving creatures, of very imperfect development. Far from being possible ancestors of humanity they represent a growth which probably began its present cycle long after humanity was established. It is probable that in the age of the early mammals a creature already acquiring the habit of a frequently erect posture (as the bears of today have done) left two lines of descendants one which rapidly perfected the upright attitude and evolved the human species, and the other which became confirmed tree climbers, and developed the Simian varieties.

We see in man and in monkey many points of resemblance, which are morphologically similar, because of their remote origin in somewhat similar ancestry.

So too we may see in the horse and in certain other quadrupeds great similarity of general form and habit, which might suggest near relationship, and yet differences in the foot and head lead us far, far back in the geological record, where they were still unlike.

We have noted that many forms which appear in the very old geological record, continue to the present day with comparatively small change, as, for example, the arthropoda whose modern representatives show some species little advanced from those of paleozoic times. And below these in the scale, there are now living many one-celled creatures, of a simplicity of organization which must be regarded as little above the beginning. When we are looking to these early forms for light upon the subject of the origin of species we soon frame a question. Are these elementary organisms perpetually newly created, or are they persisting old forms? Is it possible that the laws of evolution still inspire matter with life in its most elemental condition, when certain combinations supervene? We are almost entirely ignorant of life simpler than the single organized cell, but our ignorance is no evidence of its non-existence. On the contrary we have proof of a life, by its results, which is entirely outside of our power of sensory observation, by microscope or otherwise. Therefore if life were now so evolving in matter, in single colloid units of a few hundreds or thousands of chemical molecules, they would not be perceived by us until they had achieved a larger organization; even if their sphere of activity were one of which we have cognizance. On the other hand if there arose only once, the combination of matter and of the fiat of life, from which all existing life is derived, and which has now become impossible of repetition, because of cessation of necessary conditions—all of which may be—then we would still be unable to know whether the fundamental form persisted pure. It is quite conceivable that protoplasm might continue

growth without evolution or development beyond certain limits, in an environment absolutely constant and changeless. And it is quite conceivable that life in less primitive form, might reach a certain stage of organization, which suited conditions so continuous as to provoke no further advance.

Such seems to be a plausible hypothesis. It is evident that even when a group of creatures, meeting new environment, rises in it to new organization, it may still leave behind many of the old form not so stimulated. So that whether life does or does not begin anew, elementary life may be ever present, to supply new evolution in new problems of environment. Highly organized forms may therefore be products of ancestries of very different lines. Geology proves that a certain development of life cannot be older than a certain age; but it is silent as to the life's origin within that age. Applying this argument to the hypothetical descent of man it suggests that his ancestry does not run through all previous known forms, even though those forms arrange themselves in a series apparently leading up to it. It is clearly true that evolution is not a single series; that its great divisions are in fact separate dependencies; it is further true that many links and precedents are missing. Now it may also be true that of the ancestry preceding the known human series, so much is lost that the early species are not recognizable, although they may be comparatively prevalent in primitive forms. It is possible now, today, that a primitive type which has been dormant for ages in almost unchanging environment, may be started by new conditions into a career of evolution comparatively rapid, and may produce an organization superior, for these new

conditions, to all its rivals of older ancestry, and superior to any possible development of old ancestry. It is not only possible but highly probable, therefore that humanity arose in such a series, of late or comparatively new creation, of which few members survived, and of which the survivors all merged, and which is related to the other mammalians only through a lost species of most primitive type antedating most existing forms. This would help to account for man's isolation in the animal world; and although it is not, in present light, to be proved, it is possible enough to justify the repugnance instinctively felt toward brute life, when close relationship is urged by a precipitant philosophy. There is every indication that types present resemblances, not only because of actual racial connection, but because of recurrence of similar conditions, which, in the same life substance, cause similar results.

The time involved in the process of evolution being unlimited, and without definite end, is seen to be productive of changes equally unlimited and indefinite. After types of structure have been established in certain systems and with certain features, the activity in response to environment has proceeded in a secondary phase of modifying effect, to specialize the features but with less creative energy. It is to be supposed that common and general forms of structure arise as a natural outcome of the life energy, in reaction of certain elements to a given position in certain environments. The vertebrate structure for example is apparently a necessary result of a skeleton building habit newly acquired in a nerve threaded body, and with the same materials, available in similar conditions, it is to be believed

that a new impulse in evolution from similar simple forms, would anew produce a vertebrate structure. Therefore the possession of a spine need not indicate a close relationship to all other creatures with spines. And similarly, though in less forceful manner, it may be said of a four-legged form, that it is to be reached many separate times by the elimination of limbs to the minimum of stability; and so other such forms may be unrelated. Of course if all life be referred back to one primal germ or fiat, then all are related in that; and all subsequent forms of similar appearance are more nearly related. But on the other hand the dawn of life, the endowment of certain elements and molecules, when they come together, with the power of assimilation and growth, may have occurred at many times and places and may be occurring now.

Therefore, it is possible, even with a single germ original ancestry, that the evolution of ape and man diverged before the establishment of present resemblances; and indeed it is possible that the divergence was from the primal type of vertebrate life. If, under like circumstances, like forms will be evolved from like precedent, equally it is evident that under circumstances slightly differing, forms slightly differing will be produced. Therefore a resemblance which is not perfect, may be the product, not of recent relationship, but of partial similarity of circumstance. We must concede it possible even that different races of humanity may have arisen from ancestrally different sources, wherefrom life progressed to similar results because of similar stimuli. A study of elementary organization of simple forms, from those of one cell into those of earliest multicellular com-

binations, shows that even in the manner of dividing and allying the smallest groupings, there arise differences which limit the destinies of all generations. It may well be that when first a creature achieves the triumph of grouping eight or more descendant cells about itself in somatic subjection; it is decided forever whether its descendants can have a vertebrate or a spineless structure; or some other evolution in a simple stage may similarly necessitate a four-limbed form or a many limbed, and later again some development of nerve ganglion may determine forever a capacity for intellect. But such problems in evolution are the subject of its special research. We seek now to recognize the existence and general nature of this great process, rather than its details.

Two things may now be formulated together as of vital effect. The first is that all growths, changes and developments from a primal life germ to the most complex could be accomplished by changes of evolution such as are now prevailing, if only sufficient time is allowed. And the second concession is that time measures are of absolutely no consequence in the creation scheme. Time was, and is, available in all the most amazing duration, so that it becomes not only possible to imagine creation arising in that manner, but it appears incontestably certain that it did so arise, and that it now continues. We may thus realize that the high endowment of man does not overpass the possibilities of this process, but more than that we may believe that in its continuance humanity is destined to attain a far higher position.

CHAPTER VI

PHYSICAL LIMITATIONS

THE first aspect which we have, of evolutionary creation of the life forms of the natural world, is of course that of the life around us. Our questions first arise in regard to things that are visible or perceptible, ourselves included. Whence come they, and we, and whither do we all go? The answers are not first approached at the beginning; we seek to reach the beginning, by studying first the present, and then the next earlier; and backward from that to the next, until we seem to have reached a point which might be a starting point. Then on this starting point we arrange our knowledge chronologically, or at least consecutively, so that, in cause and effect, the laws and series of laws appear, and lead up again to the present; and then we conceive of these laws operating in similar sequence onward into the future, until we imagine what seems to be an end.

Such has been usually the natural method of objective philosophy and reasoning, and such it probably will be at all times. A knowledge of the past of this kind, gave to our civilization the old conception of the creation, and from this starting point the prevailing knowledge led through a historic system to what was then the present, to be revised and developed into the basis of the aspirations of prophetic

faith in regard to the future, and thus to become the foundation for a law of conduct. A growth of knowledge of this kind too, has been the base of the structure of the modern sciences generally.

Now a characteristic of this evolution of knowledge is that its every increase shows not only a fuller understanding of the present, and of that part of the past which was recently the present, but it repeatedly shows the point where a beginning was imagined was not the true place of beginning, but was the position of a highly evolved product, from some beginning much more remote than had been supposed; so that the real beginning recedes and goes again into mystery. The Hebrew story of the creation of man stands in marvellously true,—not absolutely true,—relation to that time from which it was reasoned; but in its first incident later wisdom sees not the beginning, but a climax, of the human evoluion in the world; and the briefly described events which preceded it, stretch back into a past of time incredibly long, now found to be effective ages, where early knowledge saw only preliminary incident. And so, in natural science, the elementary nature of the material world had explanations time after time, in terms sufficing for the age producing them, but each time has been followed by another, which has learned that the things termed elements were not fundamental, but were resolvable into simpler and earlier things, so that they stood, not as the beginnings, but as advanced forms of matter. The simple minds which ascribed primal value to fire, water, earth and air, or those which later so named sulphur, mercury and salt, were no more wrong in their day than are, and will be,

those defining elements in present and later days. There have been, in many ages, philosophical perceptions of the fact that the elemental is only in the infinite, and is through absolute unity, and yet always, in objective work, we must think that our farthest view backward is nearer the beginning. Let us at least learn the nature of evolution so far as to see its immensity. Then we will not seek to know and declare the beginning and end of all things, but only a modest yet marvellous addition to our perception of the present.

CHAPTER VII

THE BIOLOGICAL RECORD

After geology and comparative anatomy had thrown the light of convincing scientific knowledge upon the before accepted story of the creation, and had given a new impetus, and a new standpoint, for research, progress became rapid indeed. The methods of miscroscopic exploration opened to the view a wider field of physical structure, and the wonders of chemistry and chemical energy grew in corresponding sequence. Then, aided by these, arose the modern science of biology, so broad in its aim that the ancient comparative anatomy becomes a mere sub-department within its comprehensive study of the forms, functions, and descent of living beings.

Although the creation of later higher species of living things, by evolution from lower ones, is so well and so clearly explained by the special works of research, yet in the domain of earlier vital phenomenon there is less light. This science is more recent, and the field is more vast. The questions regarding the derivation of multicellular life out of the single cell, and of the organization of the cell from the primitive protoplasm, and of the generation of protoplasm in the dawn of life; are all in a stage where great blanks break the story, and make it incoherent. So too,

in the parallel search for the mechanism of heredity, and for the determination of sex, and for the nature of psychological phenomena, and of consciousness, there are only the beginnings of sure knowledge. Yet these broken beginnings give a structure of fact, which it is fair to fill with reasoned hypothesis, so that the general meaning may be brought out. We are here seeking the ethical import of biology, and not exact biological science for itself. In this effort we may occasionally use a provisional theory to get a comprehensive grasp of the subject. The unity of completeness can be realized in this and in no other way. The postulate thus used to complete the story of biology where facts temporarily fail, is confessedly to be supplanted by sure knowledge in due course.

The great achievement of biology and that at which we must approach it, is the revelation of the all composing cell.

Living matter, above the stage of the primal shapeless masses, is found to be, always and without exception, organized into form as a cell. Every such living thing is a cell, or is built up of a number of cells. No life appears except as a cell, arising from a parent cell, and for a compound creature, multiplying into cells of greater or less number, until its ordered form is reached. This is a simple statement of well-established fact. A human being and a protozoon are alike examples of the fact. It has been calculated that the human body is constructed of twenty-six thousand billion cells, all descendants from the original one, which was, in the beginning, organized in the same plan as the protozoon whose one cell is its maturity-form,

as well as its germ-form. In each the new individual begins existence as a single microscopic egg cell or germ cell, which in one case is the complete creature, while in the other it divides and sub-divides repeatedly, to build up its structure, patterned after that of its ancestors, and so regenerates a complete creature.

It is not surprising that when this marvellous fact was ascertained, it was supposed that the primary unit of organized life was seen. The cell was so hailed. Yet now, in a little time, it appears that the cell itself is not primary, but is a complex organization. It has parts, and these parts have separate functions. It has structure and history, and heredity, within its tiny wall, not only for itself, but for the complex individual creature, which its egg substance is to breed. And so we look again for the elemental unit. And as yet we do not find it; but must seek it by paths indicated by analogy, inference, aspiration, desire. Meantime we study the still imperfectly known cell, which is marvellous enough to arrest attention, and to constitute a real point of departure, from which new views are possible. It is in fact in these new views, that this present era of life study is founded.

The scheme of nature, as revealed in the organization of the cell, is emphatically evolutionary. Heredity in all its complex completeness is contained in the substances and functions of a single cell; or, when sexual duality is in view, in two half cells of similar species. Whatever appears in the young elaborated physique of a highly specialized creature, came to it through the mechanism and chemistry of a cell. That it was compounded of two parents, and so

is of two-cell origin, is a secondary feature. There is really only one cell in question, although it is composed of two half cells in the sex process. The fundamental process of reproduction is asexual, and still prevails without sex in many cases. Sex is a system of merging and distributing of inheritance, adopted because it promotes homogeneity of race; and thus is an element of strength, but it is not fundamental to reproduction.

The cell is visible in many examples. Some single-celled creatures, and some egg cells of compound creatures, enlarged with masses of nutritious substance, and some structure cells are easily visible to the unassisted eye; other germs and structure cells are so small that the best microscopes fail to reveal them, and some are known to exist only by the fact that their work is evident, as when, in suitable fluids, they are cultivated by the introduction of infected fluid, and that they are there, and have dimensions, is shown by the fact that they can be filtered out. These small microbes stand, in relation to the largest cells, as different in size as do the small creatures to the large, in general animal life. But a great number of the cells of which current life is composed, are of such size that they are just visible when separated; and these under the microscope can be seen well enough to enable their internal structure to be studied. They are of all shapes; they may lie in close contact in honeycomb forms or be drawn into long fibres, or even into branches, but the fundamental solitary form is spherical. They are composed of protoplasm, a colloid or jelly-like living compound, which is supposed to be the basic life substance. This in the cells is usually found to

be separated into two principal parts, one known as the cytoplasm, which is the bulk of the cell, and the other the nucleus, which is a more specialized portion lying within the other. There is also an internal center or focus faintly distinguishable, called the centrosome, and the whole is enclosed in a sort of wall or skin. Such is a typical cell. There are many which this description does not cover because of variable and abnormal conditions, but this illustrates the general type.

All living bodies are cells or are built up of cells. The invisible microbe of one cell only, and the human being of uncountable millions and the whole scale of living creation is thus constructed. The growth may, however appropriate the aid of nonliving secreted structure, such as shells and frames of indurated matters, which in a certain sense are not living although produced and maintained by life.

The process by which an animal or plant grows, is simply by the continued subdivision of the cells of its substance, each of which enlarges to a certain ripeness, and then divides into two, each of which continues to enlarge and divide until its destiny is fulfilled. This fulfillment of destiny varies greatly. It may be that a specialized cell such as one budding in the skin growth of an animal, is pushed into external wear and injury, and is destined merely to resist for a time and die sterile, and fall away, to give place to the new which a nearby parent cell emits in continuing fertility, until old age ends its powers. On the other hand some cells thus dividing in growth, and preserved in the securest recesses of the body, are endowed with all the heredity of

the creature, and all its new experiences; capable of reproducing all or any part of the complete form, ready to issue in due time and build a new body like the old, to become its own offspring. These are the germ cells.

No cell exists except as a bud or division from a previous cell. The cells live, not by a new life, but only by inheritance of a material portion of the old life. If the life stops it stops forever. The cell substance continues to live and grow, because it has the power of assimilation; that is, it can enlarge and enrich itself, by taking food material from a suitable nutritious substance in contact with it, and changing that material to its own composition. In this continued addition arises the power of growth.

CHAPTER VIII

KARYOKINESIS

Normal cells, when full grown and mature, have a marvellous method of division known as Karyokinesis or indirect division. Some have a less usual method which is called Amitosis or direct division. This latter may be dismissed after being briefly mentioned. It is a mere splitting in halves, of a bulk or form which is mature, or has become too large or too extended for its position and its constitution, without particular regard for the quality of the two halves. This is a crude mechanical division. In nature it is found only in such places as make it probable that it is a degenerate or decadent process, of cells losing their ancestral force, and becoming specialized for a simple function without need of successors. It is a process ignoring heredity, and may thus belong to conditions either before heredity begins, or after it is exhausted. In a skin or membrane where destruction is sure, and replacement must depend upon an inner supply, such a production may economically occur.

But in general, and wherever cell production occurs in an environment favoring continuance, or necessitating continuance, the indirect division occurs which is called Karyokinesis. This is the marvellous method, revealed by modern microscopy. The centrosome, which seems to be the focus

of the internal tie or bonding forces; divides into two parts which pass and stand one on each side of the nucleus. They seem to pull the nucleus apart. The nucleus arranges itself for division by grouping its chief substance (called the chromatin) into short sections called chromosomes, of definite number for each different species. This substance becomes a long cord which breaks into the sections—always four or six or twelve or whatever the racial number may be. These, like little strings of beads, divide as if each bead was split sideways to make two parallel thinner strings, then each half string goes opposite ways, so that the two centrosomes get exactly half of each bead or knot of nuclear substance; not one half in number only, but half of each section, and half of every single bead or knot, so that any quality peculiar to one knot is divided equally; for every such knot. Then the whole cell divides, by becoming of dumbbell shape, with a half centrosome and half nucleus in each bulb, and by separating in the middle. Each centrosome and nucleus becomes independent, and there are two new cells. Now it has been seen and shown that the division of the nucleus, thus wonderfully adjusted, awards to each new cell its absolutely fair share of the heredity. That is to say, that the parent cell is endowed with and transmits certain capacities to do certain work, and to produce certain tissues in certain shapes; not only to reproduce itself, but, in due course to produce various successive changing forms unlike itself, to suit special duties; and thus to build up the various parts of a body, in case the parent cell had such a body. For example the cells performing the regular function in the limb of a salamander, which usually grow thigh

tissues to replace those worn out; can, if the leg is cut off there, grow and produce a whole new leg, and they do it by a power of control which is ascertained to be carried by the chromosomes. This inheritance of development is thus carefully divided, and a due proportion of every endowment is passed on. Each particle of chromatin is a germ for a definite growth. And thus the new part is built up or repaired and maintained and in some cases renewed. And in the case of the full and complete egg, which is the germ cell for the whole body structure, all the subordinate parts of the heredity are included, and provided in its chromosomes.

To understand this better let us consider the course of cell growth from the beginning of an individual life. The segmenting egg of a frog, or of a bird for example, is a single small cell supplied and served with a mass of nutritious matter, which makes the aggregate comparatively large. It has been fecundated by sexual process; after it had discarded half of its own nucleus, it received a half nucleus from a male sperm, which was a half cell of diminutive size, which entered its substance. Now, in suitable environment, chiefly depending upon a condition of energizing warmth, the germ cell divides, in the manner described as Karyokinesis; but the two cells resulting, remain in contact instead of separating into independence as they would do if of single celled species. Each new cell divides again, and each of these, acting under the regulation of the chromosomes; and as they divide generally in the direction of the free ends, they form a symmetrical mass or "morula" which is a bunch of cells something resembling a mulberry.

This is the beginning of the structure of the new animal. Now each of these cells has been awarded an equal share of the nuclear treasure of heredity; and each is qualified in the same way as was the original germ cell, to construct a complete animal. Up to a certain point this is true. It is found that upon removal of part of this morula of some species, the remainder can (if nutrition and environment are right) produce a complete animal. So each cell at this stage is capable of producing any or all parts. The difference in the cells is not real but potential, it depends upon what will happen to them to produce differing demands. But now arises a new development. One of the cells divides differently, and this begins a new series limited to a specialized heredity to make a specialized structure—cells no longer fully endowed but only partially. And then the embryo takes special form, with its outer group and inner group and middle group of cells; and its special organs arise. Certain cells having for many divisions been produced to build up on one stage of the plan, another length from the string of beads is selected and used for another part of the plan, and so on, until the whole structure is done.

Now it is ascertained, not merely supposed, that these chromosomes (which have been compared to strings of beads) contain all that is needed to determine the form-plan of the growing embryo, provided suitable conditions permit. How this is done is still mystery. Several theories have been offered, and doubtless there is some of the real in each of them, but the question is still awaiting answer, and speculation is still permissible.

It is well established that the heredity of living cells is

transmitted by the nuclear chromatin, in a succession of predetermined events; each group of events controlled by a segment or cluster of that substance which we have likened to a bead on a string; so that when all the beads split down the center and the string becomes two strings, then each string has all the qualities of the parent. Quantity seems to be provided by power of assimilation and growth, that is, each beadlike group constituting a nucleus, seems to have the power of growth by assimilation to replace in cell size, the loss by division, enough to resume a size permitting of new division. Next it is observed that this growth power runs a definite course; and the end of that course is reached, after a regular development, constant for all members of a species. For example a certain species divides so many times (perhaps sixteen) without change of character, the nucleus distributing each time all the same chromatin qualities; and although size is perhaps not evenly maintained there is growth to prevent too great depreciation. One cell becomes two then each becomes two; making four. These four are arranged usually as four soft balls would lie in close contact on a table; then each of these four divides, this time in the table plane and producing upward and downward, taking the line of least resistance for equal division; and making a doubled plane group of eight cells, then each again divides outward and there are sixteen. Now at this stage (in some types) the new development appears. All of the sixteen cells divide again; but one of them does so by parting the nucleus so that the descendant cell takes, not a split half of every knot or bead, but a portion only of the *length* of the string. It may well be that the first knot

is now exhausted in this last divided cell; and the heredity proceeds with the remainder. And then as it goes on, in the process of division each descendant resumes the splitting of such beads as it receives, but they are no longer "whole-creature" cells, capable of producing a complete creature if separated, but they are specialized to produce only certain parts of the growing organization. And so certain cells begin to constitute a part called the epiblast or outer structure; and others the hypoblast, and others later a mesoblast. The first, in general purpose is external; it produces the structure of bones, muscle and skin; the second the intestinal glands and membranes; and the last, combining with the others, the internal glands and linings. But the special study of this development must be left apart as pertaining to biological science. We are concerned with moral science and so it suffices to direct attention to the manner in which this building up of the body begins, and to state that it proceeds to the end in the same way. Divisions continue, accumulating enough of a certain sort of cell, and then a branch arises which has in it less power. Note that it is not more or new power, but less. It is specialized not by a gain, but by the loss of part of the grand total of power, and by a consequent devotion to the remaining functions which are transmitted to it. And so at the last, as the structure is nearing completion, the cells then dividing are mere somatic cells, which can produce only their own local substances; skin cells which divide into skin and nothing else, or perhaps into specialized forms of it, such as claws, nails or scales, which are modifications, and may have not been distinctly differentiated.

Here at the end of the series may be found one of the secrets of evolution. These cells, which make the most recent features, are susceptible of modification by environment more rapidly than the earlier cells of the middle of the division process. The early cells must develop as their ancestors did; they are committed to that purpose, by heredity established so long that they cannot change, but the latest cells, which specialized recently when the structure was near completion, may vary much in development, and may even show longer or shorter continuation of division development, as conditions give impulse. Such latest cells are not necessarily the external cells of the skin or hair. Those of nerves and brain and of interior membranes include late developments of this class. Broadly speaking the development is most set and unchangeable in its earlier stages and most variable in its latest.

CHAPTER IX

EMBRYOLOGY

THE discovery of this biological development of complex living bodies from the single germ cell soon demanded the attention of other sciences; and embryology especially concerns the manner in which, at different stages, the growing embryo still incomplete, simulates the general structure of completed creatures of earlier species, and of less complex form.

It was noticed that when the development of the egg of a fowl, was interrupted and examined at a very early stage where the original germ cell had divided only a few times, the embryo resulting might be compared with certain living things whose life history goes no farther. Thus there is a stage in the chicks' growth, when the original germ has segmented until it has produced a bell-shaped globe open at one end, having outer cells of one kind and inner cells of another kind. This is the description of the complete creatures of the early metazoa, and the similar metazoan structure is arrived at in a similar way.

To express it in other words it was found that when a simple metazoan, or any similar creature whose organs are still primitive, reaches its early maturity, it has gone through changes, in subdivision and growth of cells, arising from

the germ cell; just the same as is done by the embryo fowl or some other higher forms, up to that stage of development. The difference is that after those changes the simpler animal comes to the end of its growth energy; stops, and ripens so to speak, and advances no further in development; while the more highly endowed animal at the same stage has only begun its growth; and it pushes on, and adds its acquisitions in more and more complex forms, until the one first considered is entirely lost to view. We find mature creatures of one cell, of four, eight, sixteen, thirty-two, sixty-four, and so on, indefinitely and less regularly, according to the number of times the germ cell's descendants divide. But every creature of a large number of cells, must reach that growth by evolution through simpler forms which resemble those of some creatures of smaller cell number.

The striking parallelism of this series of developing forms, with that other series revealed by geological chronology, is evident and fascinating. And it induces reflection upon the other parallel series of present living creatures whose mature forms may be arranged in series so as to nearly coincide.

There is seen a revelation of resemblance of the complex living creature to the simpler lower ones, and again to the old and extinct ones. These immature embryological forms are recognized as repetitions of form of an old, and sometimes of an extinct, geological species, and again are seen as approximations to existing surviving lower species of similar class.

The resemblance however is not found to be always exactly referable to the living lower organisms. Nor is it

quite comparable to those found in the geological record. But it becomes evident that these embryologic forms are the results of modified repetitions, one after the other, of those forms which have been evolved in the past by the ancestors of the animal, some of whom have become extinct, and have left no record except in this way. The germ or egg cell of every animal starts as a single cell, constituted just as its primal ancestor was, but with all later ancestry added in its chromatin, and it unfolds its heredity by beginning with the first or primitive form and adding the subsequent, to become at last an organism like its modern parent. It repeats, in its embryology, the life history of its race, from the time when a one cell organization was all that the race had attained, up to the time when it left the body structure of its immediate parent. When it first divides and becomes a two-celled embryo, it resembles that remote ancestor who was mature as a two-celled creature; and then as a four and eight and sixteen celled embryo it still makes over again what its ancestors were and so on to the end. And when all that is done, it may add a character acquired by itself. To better understand what this means, we may compare some present examples of late evolution, with other early ones. Living fowls (which are chosen for example, because of quick responsiveness to environment and visibility of its effects) resemble their parents and their race inevitably and unchangeably in certain matters which the parents found continuously essential. They have bodies, organs, limbs, heads, brains, etc., all of early evolution and existing according to rules long established. But the forms may be changed in regard to matters not so

essential. They may have a smaller and degenerate form of any feature not continuing necessary. For example the wings of domestic fowls, may be produced smaller and degenerate, in offspring of parents who never use those wings, and if no loss arises from that degeneracy it will continue. But still wings will persist many generations. They have been the valuable heritage of the creature so long, that early in the development of the chick from the egg, the wings began to grow, representing the proportionate earliness in the evolution of the race which acquired wings, and evolved them into strong and large organs by necessity for self-preservation. What has so long been cultivated will require corresponding length of time to eliminate. Yet it is only a matter of time. If the wings are entirely disused they will in time disappear. Or, if useless as wings, the limbs may be converted to such other use as is found and proved beneficial. Many new features appear by this transformation of very old ones. The feet of the duck have become swimming appliances and in some diving fowl even the wings have been adapted to use as fins for swimming under the surface.

But when we consider a very recently attained character, as for example a new color of the plumage, or even a new shape and size of feathers, or of feet, or of claws, we find even greater adaptability. The offspring may vary considerably from the last parent. A condition of variability arises when in cessation of need of some character, there is no corresponding new necessity settled. There may be then a relaxing of recent control of heredity, with much unregulated variation, instead of an addition or a substitu-

tion of a new acquirement. There may be a freaklike loss of color, or a freedom in many novelties of color; or an abnormal length or shortness of tail, or of claw, because regularity in such things is no longer governed by disabilities. It is disputed how these variations arise; but they are evident, and their permissiveness is perceived. Perhaps they are revived results of experiences long past; reversions they are called. It may well be that a character, long ago acquired by an ancestor as a consequence of environment, and duly recorded in the heredity, may wait for several generations before its effect completes the chain of influence back to the prime cell, and outward again to the germ cell, and so to somatic result. But in fact such novelties do appear, and sometimes a novelty proves useful. A shortened tail avoids dirt and disease, or a long claw increases defensive power, or a brilliant color attracts consorts or pleases man, and the new character is fostered, and those individuals in which it appears, share an advantage. They collect and increase in number, and mate together, and when both parents have such distinction many offspring inherit it, and after several generations the deviations from it become the exception and disappear, and the new feature becomes constant and fixed. Consider the pure black plumage of certain domestic fowls. It is fairly reliable—it breeds nearly true to type—yet it is a new type, obtained by the elimination from the germ of the chromatin qualities which bred the normal wild coloring, and the substitution of another chromatin quality. Back of a certain time all the ancestors of this fowl lacked this aspect of color. Something has been added to or taken from the

heredity of the fowl. The egg, when hatched, will develop just as did all ancestors until those of a few generations back; but then at the end of the series of changes there appears a chick or perhaps, in later mature plumage, a hen, with black feathers, no red, no speckled, but all pure black. That plumage-color tendency has been added to the germ heredity of the egg, during those last few generations, and imposed upon the life history of the previous ancestry. Still the germ was not changed in any preceding developments. In all other matters it unfolds over again just what the ancestors underwent. The recentness of the character is revealed in its liability to easy abandonment. Being a newly acquired heredity it is not hard to eradicate. What was done by ten generations can be undone by ten others. But if it continues advantageous it will not be undone; but will become more and more confirmed. And in that way, at times long past, all the characteristics of the fowl were experimentally added and then built up and confirmed. The character of the feathers themselves, of the wings and legs ages back; of the general form long ages back; and still farther back, in a remote past when neither legs nor wings had begun, the circulatory system, the nerves, the stomach and digestive organs, succeeded, as evolutionary improvements upon the organization of the bunch of associated cells, which clung together in mutual support as a primitive growth, a bell-shaped metazoa drifting in a primeval lagoon.

Thus we see that the primitive creatures grow, in their few hours of full development, in exactly the same way as the higher creature grows in the first few hours of its longer career. And of course we may see other creatures which

illustrate many stages of evolution between these extreme forms, showing the same method of growth; and differing only in regard to the length of time, and degree of organization, which they reach before they stop in their maturity, to begin over again. We see all living creation arranging itself in a number of such lines of evolution, each line producing different series of changes, and different species; in the varying complexity of its type. And further we see that all these creatures are still changing as environment changes. They are adapting themselves by change of two kinds, first, changes to meet new different conditions, which changes may be toward less complexity or more complexity as required, but which is normally upward toward more complexity; and second, by change due to acquirement of new character, in order to better meet continuing conditions; which second change is normally a progress to a higher type by the addition of the newly acquired thing to those previously possessed. Now these facts of embryology support and extend those of geology, and together they induce as a fair and convincing deduction, the belief that the higher creatures have reached their present form by progressive evolution from earlier forms, closely related to the primitive forms now seen, and that the process is still in operation.

CHAPTER X

EFFECTS OF ENVIRONMENT

Let us give further attention to life in its primitive cell organization. We have available for examination, descriptions of natural processes, made by expert scientific men, and these are more enlightening than our own research would be. They show among other facts that there are still living a great number of single-celled creatures, some animal, some vegetable, some of a simplicity not describable as either; and that they all have definable characteristics which have heredity of a certain degree of constancy. Geological observation provoked the interesting question; are these new creatures now in process of evolution, or are they old, of types fixed, in a heredity which keeps them to, or near to, constancy. If they are old and are evolving, so that they are to be the elaborated higher animals and plants of future time, how is it that they have not proceeded farther on that course? Part of the answer is immediate. It cannot be doubted that they are in process of evolution. Nothing in nature is fixed. These creatures are the most responsive of all, to environment, which is the evolution impulse. The methods of modern germ culture, by which some of the bacteria are deprived of their dangerous character, prove this. That notable change is brought about by a change of

the environment in which they live, which promptly evokes, not only the desired changes of character, but produces visible changes in form and habit as well. It is true that a return to former environment will reproduce approximately the former character, but even that shows continued flexibility. It is more than probable that some of these bacilli are permanently changed, in continued variation. Certain germ diseases, for example, have less virulence now, than in the historic past, and this is probably due to a modification of the bacteria, as well as to improved sanitation for the human victim. It is clear that just as the changes in life character are due to change of environment, so the only way by which a species is preserved unchanged, is by continuance of unchanging environment. After reaching an adaptation to environment nearly perfect, and a balance between production and destruction which prevents overcrowding, or habits by which overcrowding is endured and relieved (such as spore producing habit), a creature may continue without change, and so without progress.

But when environment changes, the creature changes; and if the same changed condition persists, the corresponding change in the creature continues or increases; and as soon as it reaches a certain definition it becomes a part of the heredity, and is transmitted to offspring, we may assume, by a new addition to, or change in, the recent substances of the nucleus. A particle of protoplasm has been added to the chromosome series, which is a self-registering heredity sample, of what was current when the feature was formed. And in the redevelopment of that chromosome, when that particle is reached it will react again as it does now. Now there is

nothing in this which necessitates a determinant or control of the future form; no piece of specialized protoplasm which foreshadows or compels a structure like that which before accompanied it, with the alternative of not developing. If that were so the development would be independent of environment except for the preservation of life and presentation of nutrition. This condition, when reached by actually developing forms of offspring, such as the newly hatched bird, and the rooting plant cutting, can be perfected only in one way foreordained. These have old characters, many times reaffirmed, and it is safe for the creature to commit itself to them, with little or no doubt as to their continuing reliability, and they have therefore relative permanency. But even this is only relative to environment. And the relation is very dependent in the newest and latest heredity acquirements. Protoplasm here is not committed to any form or habit or course of development except by the law that under certain conditions which occurred once, and are now recurring, it will do again what it did before; because it is impossible for it to do otherwise. It is subject now, as then, to certain laws, before which its previous performance, and its "soon-to-be" performance, are as if they were coincident. The only thing which can appear as a determinant, and compel a repetition of the former effect, is the repetition of the former cause, which is the similar environment; and the only thing which normally makes the sequence of cause and effect take a different course, is a difference of causal environment. The protoplasmic germ is steadfast only in responsiveness, not in its one response. If a different environment should present itself and if the

change is not too abrupt, the seemingly steadfast germ shows a different evolution. This then is one source of variation. Change of stimulus, or change of activity, awake the latent responsiveness of the germ-plasm, to new effort which is the basis of adaptability. It is for this reason that every higher animal species having constancy, secures it by a preserved environment. The conditions must remain naturally constant for the external budding, single-celled creature, or those of vegetable structure; but the highly developed animal guards them for its historical embryology, and preserves historical environment to preserve constancy of development. For this reason the mammalian germ is developed in the womb, deep and secure in the structure of the parent; where conditions for the rapid reminiscent growth of embryonic life, are preserved, as they were when that embryo was a primitive thing. The fish eggs can continue to fertilize in open exposure to the sea, and the sea urchin can even fecundate in little more than sea water itself. Birds and reptiles produce eggs which are fertilized and partially developed, with an organized egg structure, to carry yolk food, and suitable medium and environment, during a long and elaborate process of growth outside the body of the parent. When warmth is applied the morphology is then determined, not by the germ cell alone but in part by its prearranged nutritive environment. And in mammals this destiny of development is fulfilled under the influence of the environment provided by the structure and secretions of the parent.

The method by which evolution reaches this situation is revealed by embryology. It is seen that by the time that the

structure of segmenting and multiplying cells reaches the stage of the gastrula, which is the spherical bell with an interior cavity; the full qualification of the life-plasm remains only in a few cells, the others having lost some of the abilities, and become specialized for certain duties. The fully qualified cells continue to divide, and they produce germ cells, which are in fact part and continuation of the original life-plasm. Now some of these gastrulæ allow the germ cells to issue like buds upon the outside of the bell, while others adopt the habit of budding them upon the inside surface. So long as all this life remained aquatic (as all life was originally) the differences of these two habits would be chiefly in the protection to offspring afforded by the inward budding, and missed by the outward. While on the other hand the outward budding creatures would enjoy a method of colony growth, by which the bud could remain attached; while the inward produced buds must obviously detach themselves. And so both systems prevailed and founded many species. But later, when organized creatures began to leave the waters or were left by them a new difference appeared; as may be studied at this day, among animals of these early types. Those of external buds could not carry on their process of budding except by remaining immersed, because the heredity of their germ-plasm could not be developed except in its aquatic environment. But those of internal buds, by the simple device of closing the cavity could retain the needed fluid medium and preserve the bud during periods of land exposure. So it became possible for them to be amphibious and to return to the water occasionally and there to deposit eggs which had been internally fertilized and de-

veloped. And later again another difference arises. There were some creatures which developed the gastrula form by first forming a hollow sphere, and then turning one half of it into the other half so that the structure not only had a bell hollow, but a shell of the bell which was hollow; and some of these creatures budded inside the hollow shell so that when the egg issued from that first protection it was not emitted entirely but was lodged in the bell. Obviously such creatures were able to adapt this second lodgment and to make a second type of preserved environment, in which the egg might fully develop through its final marine stages of growth, without any return to the water at all; and without the limitations of the helpless stage of the independent, yet dormant egg.

Some of these creatures were able to become entirely terrestrial, and at the same time to remain viviparous, and to enjoy in their early stages those facilities for development of offspring which mark the mammalian animals, and distinguish them from those others whose late development is perforce in a natural environment where accidental qualities are many and the constant qualities few. Thus we find heredity, fixed by a conservation of ancient environment, still liable to variation in changing circumstances, but unchanged so long as those circumstances remain constant. A germ-plasm therefore reproducing accurately and inevitably the highly organized heredity structure of a race, does so, not by fettering its substance with absolutely controlling atoms, but by preserving in its somatic body, not only the life-plasm which made it, but also the conditions under which it formerly arose.

And evidently the apparent persistence of certain ancient simple forms shows, and is accounted for, in a persistence (or at least the very slow change) of their environment; and at the same time their flexibility under change, shows that there may have been many broods and families of their output, led away from the old stock and evolved into related forms, in new environments in which they in turn became settled, when the new environment became, and remained, settled. Thus there are logical reasons for approximate constancy of type as well as for variability of type and there is no denial of evolutionary change to be found in the fact that some species do not change. Environment influences heredity either for steadfastness or for change.

CHAPTER XI

DISTRIBUTION OF HEREDITY

In this flexible and responsive life it would seem that under changes of circumstance there would be such rapid variation that no types would remain and a confusion of forms would result. In fact there is a bewildering changeability. But there is a process which saves it from confusion. This is conjugation; that is to say the blending of two individuals in which slight differences have appeared, which still permit, or even accentuate, the affinity of similarity of racial origin. In its beginning conjugation is not sexual, although it is a simple phase of a similar principle. Mystery still shrouds the story of its causes, but some of the associated facts are coming to light. Doubtless the chemistry of protoplasm will in due time reveal the nature of those energies of attraction and repulsion, which are indicated by active life; and possibly these energies will prove to be, as some students assert, of a nature related to electro-magnetic energy. There is a method in it which indicates polarity, and suggests a force which, like electro-magnetism, produces repulsion between poles or conditions which are alike, and attraction between poles or conditions which are opposites. The higher evolutions of sex impulse, in which the sex repels its like and attracts its unlike, seem

to be so actuated. But even in the early forms it is still obscure. Cells divide, as they grow in size with suitable nutrition and conditions, and each half cell obviously remains divided, and becomes independent, because of a continuation of the causes which made it separate. Whether because of a mechanical rupture by its bulk surpassing its cohesive machinery, or because of polarity of a chemical generation of repelling forces in its particles, for some reason it divides, and in making thousands of divisions, it becomes part of its nature to divide by habit. It is apparent that the habit of dividing as a consequence of unwieldy growth, might arise in masses of protoplasm; even before the organized cells existed; and the separation might be maintained so long as the substances were alike; and might cease when difference arose, and attraction ensued. Then masses or cells would coalesce and blend, becoming one mass or cell by complete fusion; the impulse to combine being in that certain kind of unlikeness which induces a chemical affinity, or a polarity. This fusion is perceived to be not a combination in which one destroys or consumes the other. There are of course such consuming absorptions, in which one cell digests another; but we consider now a mutual act in which all possessed is added; the bulk and the abilities, and especially the heredity, with constructive accumulation, by affinity, and not by destructive appropriation.

This simple conjugation is observed and known as a fact; and it is a very important fact. Its simplicity has attracted attention less than the more elaborate union of sexual nature; yet it is probably the precedent to sexual union. There is in all higher cellular life, a curious prevalence of even

numbers in the units of the nuclear substance, which are called chromosomes. These small groups of chromatin substance which control the heredity, are of variable numbers from two or four in some species, to a hundred or more in others, but the number is always the same in a species, and it has seemed mysterious that the number is always an even number; so that in certain conditions it can be divided into two half cells, as a preliminary to the union of one half cell with another half. Now this circumstance can be supposed to arise in a pre-established habit of conjugation, as a condition precedent to sexual ability.

It is not to be supposed that sex is an original necessity, in fact there are even now prevalent various other modes of reproduction; and in one-celled creatures sex is obviously of only partial potency, and may be expected to reach only preliminary form. This preliminary form may well be the adoption of the doubled nucleus as the normal; that is to say the stage at which a cell has most stability. The cell arises as the organization of protoplasm with a nucleus. This occurs while that protoplasm is repeatedly dividing in growth of mass of uniform character, and repeatedly reuniting when affinities arise. Now an observed rudimentary cell may present itself, at the stage resulting from a division of former protoplasm; or it may present a mass, at the stage of the recent addition of two former cells. When we observe the descent of one cell from a parent, the obvious origin by division seems to efface the other possibility. But if we consider that the protoplasmic mass arose first, by the addition of an assimilated unit to a pre-existent unit, it is still more obvious that the fundamental process may be one in

which addition precedes division. It is fair to assume that in the primitive proto-cell which is invisible, conjugation generally precedes division; and that the normal constitution of a cell about to divide is that of a cell recently conjugated of two, or of many more with a minimum representation of two.

It is not necessary to suppose that this method is at first inevitable. If it is considered to be possible, and if it occurs and shows advantage, in competition with other methods, then it would survive them. And if it did (as seems likely) open the way to the great advantage of sexual reproduction, then its survival, and evolution above other forms, is easily understood; and when we consider also its primitive value in the cumulative effect of simple conjugation, its value is again apparent. And finally the first noted result, the distribution of acquired character and the unifying effect among the species, is of high consequence and will appear later in a new aspect still more important. It is the mechanism by which a multitude of creatures may preserve uniformity of desires and purposes, in collective mutual activity, and thus it is at the root of a race heredity.

CHAPTER XII

EVOLUTION OF SEX

THERE is noted a cumulative effect of heredity which is attained by the simple conjugation of single cells as examined in the last chapter. When two cells approach and amalgamate, after a difference of experience which induces in them an affinity or attraction, it is clear that some of their properties are added, and not merely averaged.

Observation of conjugations and especially of hybrid unions; indicates that if one creature has a heredity which is a chain of ten experiences, and the other a chain which records eleven, then the resulting heredity of the combined cell is eleven experiences; the first ten which were alike in both (because they are creatures of the same order or race) and the last, or eleventh, which was recently acquired by one, being a new evolution still in experimental stage. The student who has not access to biology of primitive life, can see this process of added heredity in common domestic animals. It can be observed, for example, when the young appear possessed of certain character of recent development, which was possessed by one parent and not by the other. Thus the possession of horns by cattle or sheep may be the result of one parent's heredity even when bred with another deficient in them. The effort to breed hornless cattle has suc-

ceeded only by selection of parents both hornless. And other examples will easily be found to show that heredities are usually added in fusion. This is an important principle because it is the essence of progress in evolution. It is this which makes successive generations higher in organization and not merely fitter in low organization. It is by such additions that we see species rise in the scale of ability instead of merely changing from one to another function.

It is important to our study to note that when conjugation occurs, any progress which has been achieved in heredity on one side more than on the other, is not lost. It may be diluted; it may be continued in a certain number of the offspring, and if it is not continuously useful it may be overruled, but if it is not too abnormal, it is preserved experimentally. Conjugation then endows all the species which practice it, with a distribution of the sum total of the heredities of all individuals. That is to say it works toward that end, but the degree of achievement is of course limited and various. Yet it is seen to be effective enough, when taken together with the unifying effect of similarity of circumstances, to keep definite types dominant in certain locations. Evidently there is in this process the influence against confusion which we desired to find—all valuable variations and differences tend to preserve themselves, not separately, but by immediate distribution to, and amalgamation with, the whole race, or at least with those parts which are in possible contact.

Let us again note in single-celled life the possibilities of conjugation. Evidently union of two cells may produce bulk greater than usual. So in due course when the union

becomes complete and the unlikeness ceases to induce attraction by polarity or by chemical affinity, either of which may be neutralized by complete union; the capacity for size and form are overstrained, the habit or law of the structure is asserted, and the mass is again subdivided. This is also a fact in biology which may be observed in nature. Division normally follows after a conjugation. It may be a simple division into two equal parts or it may be, as is sometimes seen, a breaking up into many minute parts or spores. The first might be inferred as most likely to follow the conjugation of two youthful cells, and the latter as likely to result from a union of mature cells, although this inference refers rather to a riper knowledge of types, than to any special examples.

The difference of polarity, or of chemical quality, which provokes conjugation, can arise in several ways. We have noticed differences derived from a variation of experience and heredity. But there are other impulses. As division arises from excessive growth so conjugation is to be expected to be promoted by innutrition or loss of bulk. And so it appears. Circumstances may so weaken the solidarity of the cell that its bonds relax while its substance remains vital. When by reason of maturation or exhaustion, or insufficiency of nutrition, or other conditions adverse and yet not destructive, the individual cells cease growth and dwindle, there are obviously several possibilities according to which their faculties may be affected. They may suspend all activity and conserve a dormant energy. Some do this. They may continue the habitual division with exhausting effect, as some do, in divisions which are unequal. This

kind of division is very important as it is one which is later adapted to high functions, in higher forms of heredity, and always precedes sexual conjugation. It seems to show that the impulse to divide continues in the centrosomes, and is, under some circumstances inoperative toward the cytoplasm or general mass; even while the nucleus is submissive and responsive to the last degree of endurance.

It appears in some cases that lack of nutrition, or perhaps its exhaustion into the nucleus, extinguishes the cytoplasm and under these conditions the nucleus still divides as impelled by the centrosomes. In the cell of scant and exhausting cytoplasm, the centrosome still has energy to divide, and to exercise its repulsion of its like; which continues to the last possible division of the duplex nucleus into two similar duplex nuclei; and then, when the centrosome divides once more, the doubled chromosomes have no molecular surplus to act upon; they are exhausted and instead of separating themselves in the double form, they simply split into the ultimate single primitive units; so that a cell which usually shows four chromosomes, will in these final divisions show only two chromosomes for each resultant cell. The cell stands disrupted into four parts, each with the fundamental single chromosomes, constituted with the minimum number of divisible units necessary for its molecular character. This final unit appears as a result of exhaustion, or of maturity, under conditions varying from that normality which continues life without change. But there arises from it, in the wonderful possibilities of natural selection, a function which raises life to a new plane. This function is sex.

This finally reduced cell, which is a mere spore, acquires in this reduced condition a reduced susceptibility to injury. Such spores endure cold and heat and other abnormal circumstances which would destroy the active cell. But in addition it acquires by its minuteness transportability, which sometimes we see developed by actual motile organs. In this capacity it more readily finds new environment, which may perchance be better than the old, for its special faculties and failings, and it may find there others of similar constitution, with whom it may conjugate in the former duplex organization, and so may resume activity in a new cycle. But beyond all these advantages there appears one which is destined by its superiority to become most important. This is the advantage to such a spore-like cell, of finding one of its own kind which is still endowed with an excess of the cytoplasm in which this cell is deficient; one which has experienced an abnormal surfeit of prosperity and is therefore complementary to this one suffering the results of a surfeit of activity. There are such cells and the encounter does happen. In some cells a similar division occurs, with a variation, under circumstances which may seem to be quite different, and yet must have relationship. The cells which exist under abnormally favorable circumstances and are favored in highest nutrition, with no destructive adversity of external conditions, also reach at last a maturity somewhat similar except in one regard. The cell at the end of many divisions, like those recited above, in which the last of its former chromosomes remains in one quarter number, is of abnormally large cytoplasmic size. This condition seems to arise in a loss of the normal relationship between

nucleus and cytoplasm and centrosome; which consists in some disturbance of the chemical affinities. The centrosome persistently dividing as before, and carrying with it the nuclear divisions, fails to divide the cytoplasm, which is in this case an abnormally large mass of the cell; and so a division occurs, sometimes stimulated by the male cell, wherein the half nucleus leaves the parent cell stripped of all mass; a mere fragment denuded. Then the half which remains, still a duplex nucleus, splits into single elements, and one group of these single chromosomes is also ejected, while simultaneously the last duplex spore ejected splits into two singly constituted spores. Thus the abnormal great cell stands with single chromosomes; after producing three spore cells resembling those of the exhausted cell. It would seem that in both cases the dividing act is due to a loss of chemical affinity between the centrosome nucleus and cytoplasm, but in the small cell the cytoplasm has lost its energetic character (perhaps alkalinity) while in the large cell it seems to be the nucleus which is changed (having lost perhaps active acidity). This inference is in harmony with the facts that follow. We have seen that the escaped nuclei of the small cell became errant or motile. Sometimes because of mere infinitesimal size, sometimes by use of actual cilia or motile organs, they wander from the old placement; and when they arrive in the vicinity of a great cell, as some do, there appears an attraction which is very different from the older conjugating force. They unite with a more intense activity, not merely to add their heredity in a common fund and produce a cell capable of simple division, but to renew the vital functions of the whole historic nucleus, and

repeat all its ancestral constructive work, re-endowed with the duplex constitution. Some mysterious cause has reduced the cells to germs; has endowed one germ, the sperm, with a nucleus of male activity, and the other, the egg, with a cytoplasm of unexpended female nutrition; and between them appears an affinity as of acid for a base, or as the positive for negative electro-force.

Now this difference constitutes the sex functions of all sexual living things, from the most primitive, where sex begins, up to the highest orders known. The process is alike in the sea urchin, in the worm ascaris, and in the human being, in its essential features of cell maturity, cell reduction and cell union.

Everywhere the germ cell arriving at maturity develops these singled, less complete forms, which are male and errant under some circumstances; probably those of activity and difficulty; or female and dormant under other circumstances, generally when environment is abnormally inviting. This mode of reproduction prevails, however, not because it is the sole possible mode, but because it has proven so advantageous in comparison with all others, that it has well nigh displaced them in the forms of somatic organization of life, by survival in greater fitness. Its first advantage is doubtless in the specializing of the functions of the two sexes, a mere division of labor.

We see its great distinctions from the simpler conjugation and redivision, to be twofold—firstly it achieves a fundamental reduction of the chromosomes which, upon reunion, causes not a single redivision but a historic reminiscent development—and secondly it promotes and prefers

union, not of closely similar fundamental germs, but of those circumstantially different; that is to say sexually different.

It is not intended that this description should be taken as the life history of any particular single-celled species. It is an abstract presenting the typical features of a primitive form of sex. The Algae present such an endless variety of methods of reproduction, both sexual and asexual, that almost every possible experiment seems to be proceeding even now; and the student who desires concrete examples, can find them in abundance, in the biological study of that order.

The process is fundamentally the same whether it be the activity of the single celled Algae or of the germ-cell of a highly evolved multicellular being. In the latter case it has become the only method of reproduction, because it is evidently the only method which could accomplish the elaborate transmission of heredity upon which high evolution depends. In the fully developed sex process, normal to the viviparous animals, including mankind, the large or egg cell becomes a "resting" cell as soon as it is mature, and it loses the power to divide in asexual reproduction, which some of the single celled creatures retain. But it remains equally true in all species that the beginning of a new individual, is in the segmentation and development of a single minute germ-cell, which builds up all the rest of the body.

CHAPTER XIII

DISTRIBUTION BY SEX

The function of sex in cell organization can hardly be over-estimated. It is difficult to imagine the possibility of a multicellular body without it. The function of mere conjugation is of simpler import—as must be more clearly shown.

After the evolution of the life of single cells, in which a great development is visible, there appears to arise an abrupt and stupendous departure, an evolution into radically different possibilities. This great step upward in evolution must necessarily be first made possible, by pre-existing developments in the one-celled species. Its essential new thing is the association of many cells in mutual dependence instead of in competitive rivalry. This is called the great step in evolution because it is the beginning of division of labor and of specialized abilities, and it is thus the physiological basis of altruism. As soon as a living cell divides and there are two side by side, there develops the question whether they are allies or rivals. If rivals, they repel and oppose one another, and must remain one-celled creatures. Even conjugation makes but a one-celled creature, and subsequent division two or more such creatures. And association in colonies is only an alliance of similar efficiencies, with specialization only of position, and not in the heredity. But

in the new phase, cells associate in mutual support, with specialization of function which is not lost, but is, by sexual heredity, transmissible and cumulative. The degree of association of single cells may at first amount to nothing more than tolerance, and may be so slight that a little crowding upsets and destroys it. On the other hand it may soon become so close and so habitual that it is necessary for existence. Examples of both habits are found. There are to this day single-celled creatures making no sign of associated action, beyond the mere submission to propinquity, which becomes in due time unendurable; and there are others whose habit of crowding is so necessary that it is difficult to recognize their single-celled existence. There are vegetable forms which show inherited specialization, preliminary to the greater advance. The direction of the great step is determined when a number of cells in close association, become fitted for different duties, still having a common purpose, and then by habit become settled in those duties, and by heredity confirmed in them, so that none others are demanded of them. Let us imagine that a cell just divided or budded from a parent cell, should, for some reason, remain in contact with it. Perhaps because it afforded more stability to a form floating in water, or resting on the bottom of a water pool; a few creatures in which such contact arose by chance, might be so benefited as to evolve a new variety. Perhaps there is a yet undiscovered system by which such advantageous variations are stimulated, instead of being merely survivals of accident. In either case we have, in fact, two-celled creatures. That is to say creatures composed of one prime cell and another associated cell. This conception

suggests that two cells might begin such an alliance because they were unequal; and one, the primary, had produced an offspring of inferior power, which was thus unable to launch into independence; and which, to preserve its existence at all, must remain in alliance. It is not to be supposed that a primitive creature selects a course for its activities; when a question arises in nature, if it is one of any consequence, it appears in many cases; and is answered by many responses, and some of the answering creatures die and their solution is pronounced wrong, while others survive and their solution is found to be right.

Thus it arose that some combinations of two cells found their experiment beneficial, and cells issuing subordinate cells, prospered thereby. Now these subordinate cells need not be sterile. The impetus of division, established in habit as earlier studies revealed, impels the continued division until nutrition or affinities fail, or heredity is fulfilled. The master cell also, must be imagined to itself produce other issues of equal or subordinate cells. So that in time the master cell would be possessed of a number of attendant cells doing accessory service. These accessory cells, as observed in nature, are called somatic cells; that is, body making cells, as distinguished from the master cells, which are the germ-plasm or self-perpetuating cells. The somatic cells are qualified only for subordinate work, while the germ cells are portions of the immortal germ-plasm, and are qualified to issue germ cells with all the heredity of the life-plasm. The somatic cells receive only a part of the inherited chromatin qualities, while the germ cells receive all of them. Thus the latter alone are capable of becoming new master

cells and founding new associations, the former can only continue the growth for which they are specialized. Such a differentiation also proceeds in other ways. Suppose another case. Before any subordinate cell arises, there occur several divisions of the prime cell, producing equally qualified cells, eight, or sixteen or thirty-two in number, all of which remain associated; and then and not till then the somatic subdivision begins and some of these cells produce attendant cells of the only partly qualified type. This process is observed in nature; that is to say actual living germ cells can be seen to divide in this manner. Several species form thus the bunch of cells called a "morula," any one of which is capable for a time of being promoted to the functions of separate life and if favored by environment can become a separate complete individual. But in normal development one of the early cells, the ninth or the seventeenth, or whatever the habit may demand, shows a lesser endowment and instead of taking equal and symmetrical place with the others, begins the formation of a new substance of lesser degree.

Meantime all the cells continue to divide, and in due course nearly all are appointed, in the same way, to special duties and lesser dignity. There is, however, one line in which, by direct succession and division, the original, fully endowed, germ-plasm is continued. This line of cells divides always in the germ fashion, that is by full Karyokinesis, until maturity, and then at last it divides as we remarked in the evolution of sex and a sex cell appears. The germ-plasm is a mass of protoplasm growing in line direct, surrounding itself with descendants specially limited to sub-

ordinate mortal careers, ministering to the preservation and service of this line of master cells. There is thus in actual physical fact, in the visible history of all mortal creatures, which we may see and know, a direct perpetuation of material protoplasm; not a spirit or soul, but material substance, which has never died, and which continues to propagate itself in this body of subordinate cells until the body is mature, and which then, when the first maturity foretells deterioration, begins to issue from that body by the reducing divisions of the sexual import, and to begin a new cycle of energy, and in reunion, to make for itself new bodies like the old, modelled upon all its previous experiences in many generations, and including its newest acquirements in progressive evolution. Such is the germ-plasm which is immortal so long as it is successful, and progressive so long as it is right in action.

Now this high organization of cells into the construction of large and complex bodies, of cells in association, by which a living cell makes for itself marvellous specialized machinery or activity, is made possible by sex; because, although a simple species of such organized life can theoretically continue without sex, by the primal method of asexual fission; yet it is by sexual distribution that the newly acquired qualities of individuals are extended to others, and made the common property of a species. Sexual reduction and union provide a means of regeneration, in a new grand cycle, specially available for the accumulation of inherited progress. This the germ-cell appropriates to its own sphere, leaving the simpler asexual conjugation and division to the lower structural sphere.

The asexual division can thus be allotted to the somatic sphere of duty when the function of distribution of heredity is assumed elsewhere. The new order of creatures must distribute its heredity by amalgamation, if it is to build up a harmonized community. Without conjugation, experience and evolution would be individual; and as environment varied, so all individuals would vary; and each line of heredity be a species to itself, incapable of organization into collective action. After the devotion of ordinary division to body construction the function of sex therefore includes the distribution to the use of the whole species, of the progressive heredity of all its members; with a result of harmonious participation in the results of experience, and continued similarity in structure and habits.

CHAPTER XIV

MULTICELLULAR BODIES

We have seen that heredity adds the experiences of many generations of animals, and preserves their results, to the germ-plasm, which continues its life through successive generations of bodies, composed of many specialized cells. Let us now compare with the facts lately noted, the corresponding process in embryonic life of higher evolution.

These mortal bodies are built up of somatic cells thrown off by the master cells, in the human body construction, as in lower types. The germ-cell is compounded of two half cells, the large, abundantly nourished, female element called the ovum, and the minute bare male element, the sperm, each of which has been reduced, in expiring activity by a final act of self-isolation, to singleness of chromosomes. These half cells each carry an exact record or specific for their heredity, that is to say a condensed compound of material molecules, which has been accumulated during innumerable generations of ancestors; which, if it can be induced by renewed energy under similar environment, will unfold or develop, and repeat the acts of cell evolution, which those ancestors performed. That is to say it will reproduce the structure-making which is registered in it, just as if every act in succession, had been recorded by the placing of a sample of the protoplasm which accomplished and endured that act.

But we have seen that although each half cell carries its complete record it cannot act upon that record alone. It has come to the end of its self divisibility atomically, or of its energy; so that it cannot again divide. But, in experiencing this deprivation, it appears to have gained a new faculty. Before it split up into ultimate units, it had no power to unfold its heredity. It had then a doubled nucleus and doubled centrosome, and when provoked to division, it merely divided into two similar nuclei, each of which took its share of cytoplasm and made one new cell. But never did it divide into more than two cells. Now, however, each half cell has only a half nucleus and there is between these half nuclei a tremendous attraction of affinity. They amalgamate in conjugation of opposite sexes.

The division which ensues is not the simple division which followed the conjugation of similar cells. It is a precipitate growth in the abnormal cyto-mass of the egg, of the new nucleus, so phenomenal that over and over again its substance is halved, in a succession of divisions. The energy developed is incomparably greater than that seen in the division of cells in ordinary growth. It may be surmised to be proportionate to the great chemical unlikeness of the two elements, male and female, which have been preparing in different environment for a long period. In this rush of growth the cells divide in a new way, which engenders the somatic series. Taking first each a full share of all the nucleus they form a "morula" or bunch of cells just as did the protozoan ancestor in whose body the first bead of the nucleus was saved. Now presumably, this activity is first evolved in one of the chromosomes, which is thus growing and dividing and controlling

the division; an actual continuing portion of the same protoplasm which did that act of division ages ago, when that act comprised the whole of its consequence, when it made a creature whose heredity ended in that act. And the reason it does this same thing now is simply because it is now the same substance acting in the same environment. The fact that later many other things are going to be done does not affect this idant any more than a similar fact would have done in the time of its first ancestor. That fact is to be cared for by another idant, of those others which lie as beads upon the string. What this first one does is strictly its own affair. It therefore divides the germ cell so many times, and each time it passes on a due share of the nucleus. (The activity of the division may be ascribed to the centrosome but the distribution is controlled by the chromatin). Then that explosion of energy, operating in all these new cells, having fulfilled the function of the first idant, passes to the second. This is one which was first acquired when the morula of all-germ cells utilized some of them, in disuse of their full purposes, in subordinate service; and when natural selection and survival preferred them; and preserved germs from the favorably placed cells among them. When that occurred the "variation" or acquired character became fixed and its constancy became recorded in the nucleus. Now just how this recording was done is much in dispute, but it may be surmised that in the body of all organized animals, there is continued simple conjugation of cells, proceeding between some of those related and having a normal likeness. In this way a somatic cell, an offshoot of the germ or of the master cell, might pass through certain generations in its

special function; and produce successors at the decline of its vitality, which were changed enough to have affinity with the germ from which they arose, and to be acceptable for conjugation with it. In fact many cells are observed to coalesce in such a way as to suggest this; although their union has been often ascribed to mere functions of nourishment, or even to destructive competition. It may well be that a general system prevails that final singled cells and polar bodies, instead of being wasted, are returned to their center of origin selected by affinity of a prime germplasm cell, of a somatic center leading to the germ; and then by simple conjugation, their fulfillment of function, together with a record of all newly acquired function, is made due part of the germplasm and of its heredity.

The germ, obedient to cause, records and transmits such somatic things as it makes or causes. It will not transmit a character caused to the somatic body externally. An amputation is not transmitted because it does not affect the germplasm, or, if it does, may be surmised to rather provoke an effort at repair, in a limited local healing of a wound. But let a difference of length of a limb or such structure arise in the germ or life-plasm, or even in its structure centers, and let this be repeated a few times, in a selection of such self-caused cases, and let it next be presented in both sexes, and it will, and visibly does, become transmitted and soon fixed. Examples abound of the heritability of an abnormal number or size of fingers in man, as well as of the non-heredity of surgical effects. A character thus acquired may be new, an addition to the old; or it may be a mere change of an old character, as when an animal acquires a length of limb con-

ducive to greater speed or endurance. It appears necessary to allow long periods of continued variation to establish any such form as is entitled to be called new.

The question of the cause of variation may be passed with brief mention, as not essential to the present study. The moral aspect of evolution depends upon the fact that variations appear, and are added to the heredity, and so constitute a possibility of upward progress as a consequence of right conduct; this is a fact which can be established without discovery of the source of variation.

CHAPTER XV

THE TRUE EGO

The great contribution of Biology to the study of Morality is the revelation that the egoplasm—the true ego—is continuously living—the same physically visible substance that lived from the dawn of life, in a succession of individuals, generation after generation. The germ-plasm which issues from the body or develops within the mother body, is not the product of that body, but is the producer of it. The germ cell must be a portion of the original germ-plasm, because that is the only part of the parent which is competent to produce it. The body cells are not competent; they are qualified only to produce the special kind of cells like themselves. It is of course true that the germ-plasm is nurtured and modified by the somatic cells; it is probable that the experiences of the somatic cells are conveyed to the germ cells and absorbed by them to continue the heredity. It is also true that the germ-cells perform certain somatic functions, but the germ-plasm, the true ego, is the master-plasm, which is continuing its own physical living substance in the shelter of the body it has made, which is destined to die; while the egoplasm continues in new bodies potentially immortal.

It is not necessary to suppose that there is a special gland or organ where the germ-plasm is resident. In fact it is

known that in some species of animals the germ-cells form certain internal parts of the structure, and so act as somatic cells, but they differ from the somatic cell in the fact that they retain the full endowment of the germ-plasm. In the human body the germ-plasm is probably involved in the substance of several organs of initial vitality, where it continues to develop under the influence of its somatic dependents, receiving through the circulation impressions and records of their experiences, and making new responses; and at last, in the laboratories of the specializing sex organs, resolving itself into the ovum or sperm cells according to its present determinants. Then, in case the normal fertilization occurs, there begins again the construction of a new body in the manner previously studied. The early divisions produce cells of full germ power, and these produce the specialized somatic cells of limited power.

In due time each and every descendant cell, engaged upon the structure building, must be supposed to come to the end of its energy at about the end of its duties. Those branch germ-plasm cells which emit the formative cells are apparently usually extinct when the human body reaches old age, while evidently the cells of lower order are still active, and some must remain active through old age, for even then the skin and tissues continue growth and renewal.

It must be especially recalled that in all this development one line at least of cells has continued always fully endowed. When the first germ cell divided into two, at least one of these proceeded in a line unchanged; destined to maintain the continuous full functional life of all its kind; and this protoplasm, which must be considered as the human being proper,

the immortal substance which the rest of the structure is appointed to serve, sets off in due course a portion of itself to be the next master of a new body. It is very noteworthy that the setting off of a new germ-cell for the next generation, is done in some cases by the master-plasm in the embryo, long before that embryonic development is complete. This is a necessary consequence of the recapitulation of the race history. The unfolding heredity of the master-plasm at some time reaches that idant which was formed when the race ancestor first set off a special germ-cell, that is to say when instead of budding or dividing at places not specialized, it developed the germ-function in one specially suitable part of its substance. Now the human germ at the corresponding period; when it is an embryo of this same primitive type, sets off a germ-branch for the new body, and it begins to differentiate the special organs needed to preserve it, when the main structure is not one quarter complete. The lesson of this is that the germ is not made by the structural body, as was long supposed, but the structure is made by, and for, the germ. The germ-plasm (human or of any other species) is not a substance prepared by a body so that the body may repeat itself, but the germ is a strand of the life-plasm, the ego, making a new body for itself. It precedes and produces that body at its primitive beginning, and when the body is born, the new germ lies in the receptacle of its own making, continuing its own immortal destiny.

Even before birth of the new infant body, the future germ within it is being endowed with heredity as the body is completed. In the human species the body is well-nigh completed within the parent, so that the end of the first great

period of the structure-building age, is almost coincident with birth. Before that some of the somatic cells have fulfilled their mission, and have returned with their new record of heredity. The original germ has developed its master-plasm which is the ego, and some of the new germ-cells are actually set apart.

Then the structure being complete in form, the next great period supervenes; that of growth. For twenty years or more of man's life there is still production of energy in excess of expenditure, and cells continue to multiply, and conjugate, and gain experience. But in less than that time exhaustion begins in some places. The master-plasm, receiving and renewing exhausted worker cells, shows the effect upon itself in the maturing of the first of its germ-cells; and there issues the first of the nuclear life-plasm, in sexual form, equipped to renew the cycle, if the affinity of opposite sex is found; but at the end of its energy, and mortal, if left single. And from that time onward, for forty or more years, the master-plasm continues to issue from the slowly wearing body, cell by cell, as its immediate abiding place becomes less tenable, and to make for itself new bodies better than the old; better because of added abilities gained in added experience, and preserved in added heredity.

Thus is realized and self-perceived the true ego of humanity, a lineal life linked with many branches of descendants; a greater life in the enjoyment of continuous development, as a just consequence of right conduct, in a material existence potentially immortal. And this career is the promise of evolution.

The next great step upward in the evolution of Humanity

is to be the development of the consciousness of this greater ego, by which man will recognize himself as a being living life after life in continued regeneration, and in potential immortality. That will be as marked an advance as he achieved when his individual self-consciousness raised him above the brutes.

CHAPTER XVI

ASPIRATION IN EVOLUTION IS MORALITY

THE specialized somatic function of dependent cells and the new capacities of life in organization, evidently mark the appearance of a great principle upon which rests the whole system of co-operative life. This first stage shows it, in relations of necessary interdependence, replacing the old independence and achieving immense new powers thereby. And co-operation, when of life organized in conscious activity, and evolved into high order to combine individuals as the low order combines cells, is morality; and this is a force, or rather a virtue in the application of force, which applies to higher and still higher units. We see, as one of the results of sex, not only in humanity but in all life, the evolution of the power to co-operate in the altruistic virtues of duty, affection and devotion. These are the forerunners of that organization of individuals into the higher units of family, clan and nation, which begin in comparatively low animal types, and reach only partial completeness even in humanity. Evidently the unit of activity is still growing under human civilization. Where now a clan of a few hundred act in unison, there is to be, in the fulfilment of this evolution, a nation of many millions; and where many nations now strive, there is to be unity in alliance, founded in extension of the basic co-operative principle. It is this principle, and its

evident present incomplete development, which makes evolution of such import to the moralist. The stupendous consequences produced by each step in that direction which past life has taken, are only suggestive of what may be expected from it. And noteworthy in this connection is the clear material foundation of the principle, in the fundamental biological substances and processes of human nature, and the manner in which that principle, resting on purely material value, rises in evolutionary development into a high character, which if not spiritual, is certainly, in purport, at one with spiritual aims, and may be looked to as a means of lifting animal nature into phases of what is called spiritual value.

We see that alliance which is based upon sex, developing virtues of almost ideal character, courage and devotion, honor and faith, affection and gratitude, and self-effacing altruism, and sacrifice; and calling out in turn duty and unity and co-operative power. All these things appear in evolution to grow normally into larger capacity. As they appear in conduct in the lesser individual life they are understood to be human virtues, but in their unseen possibilities of evolution they are of almost divine nature and capacity. Just as the human life is revealed, as not only noble, but as becoming nobler; so is human conduct seen to be not only lofty, but as soaring continually higher.

It is evident that life in evolution is forever reaching toward a higher future. Life of little consciousness, and of no self-consciousness, has no care for yesterday, and no thought of tomorrow; yet even this in normal evolution is rising in scale by inherent forces upward. Although the conditions may, in changing, make sometimes for a preference of a

lower type of organization, yet this is abnormal; and even when it happens that lower type remains reminiscent of a higher past. The normal change is upward for many reasons, the chief being that biological evolution adds experiences and qualifications—it plants the new upon the old, not in the place of them; and another is, that the aggregate life is part of the environment of the individual of that same type. The individuals are in competitive rivalry (not necessarily destructive) which stimulates and prefers every higher qualification; and they are again in a conjugating organization which distributes all such gains, and creates a greater unit of the same life, of which the strength is numerical. This strength is limited and determined only by the degree of perfection of the organization; in other words by its capacity for size, in its faculty for co-operative activity. Progress in this faculty, is the essential effect of altruism, while it is in turn productive of more altruism.

The rule then of upward progress is an automatic and fundamental one. It is a function of all vitality, and not the mere privilege of self-knowing, conscious virtue. Progress is inherent in the life-plasm. Its power to assimilate and grow is a power to store up energy, and to expend it in a form co-ordinated to the larger unit of organization. And the perception of, and desire for, the highest results of this progress in cumulative benefit by organization, is the essence and power of morality in nature. Morality is the handmaid of life, and not the dictator.

The heredity of a unit of conduct thus grows in import. From being a single cell reserve, it becomes a many-celled power, and from this, enlarges to become a power for many

individuals in concerted action. Much of the heredity of an individual is, in fact, seen to be, not to the individual advantage; and this is the apparent inconsistency of the scheme of life justice. It compels a morality which may demand self-sacrifice often, and even self-immolation at times, in order that a benefit may accrue to the larger unit represented in the lineage, the family, the nation or the race. That is to say there arise circumstances when the reserve of inherited power with which a creature is endowed,—that power which he received by no individual merit, but out of the ancestral and collective strength, and which he holds only as a trustee of the lineage in collective strength,—this reserve is demanded of him, and he gives it upon demand. But he who gives is the ego of lineal life, acting in the individual who seems to be sacrificed.

The birthright of every creature above the scale of the protoplasmic unit, represents a bestowal of something upon the individual, which is the gift of individual life, of the fundamental privilege; and it represents also a secondary trust gift of heredity; a gift accumulated by all the ancestors of this creature, not for his sole use, but for the use of *all* of their descendants. Therefore if the normal individual is to be considered as a conduct unit, he receives this gift of heredity as a thing to be dutifully enjoyed, and transmitted not smaller than received, but greater by his added experience and conduct.

The unconscious performance of this duty of added progress as it is shown in lower life, reveals its essential importance. The self-conscious life of humanity perceives this law not with any emancipation from it, and not as a permis-

sion to evade it, but with an added responsibility to observe it better in the knowledge. The perception is a mandate to a higher duty and an insight to farther privilege. It is the foundation for hope in every time of a sense of unfitness; and for triumph in every sacrifice. The neglect of it is penalized by its own consequences. In a world where co-operative life is building up always, in progressive evolution, to neglect this principle is to lose the advantage of mutual support. Even to stand still in it is to lose the coming award of its benefits, when those who have not stood will be allied in their merit.

It is true that every one of these trustees has freedom. Liberty is part of the trust in the highest phases of co-operation. As is clearly shown in the study of conduct of the lesser or individual life, controlled activity is less effective than free activity. Forced co-operation is less effective than voluntary co-operation; and when, in due course, free unity of purpose appears, even if only an accidental variation of conduct, its superiority gives it precedence. Thus liberty is added by evolution to the hereditary trust, and the fulfillment of duty becomes in its highest form voluntary, and not a mere obedience to a control or direction. This recent addition to the strength of humanity, which is made evident in freedom of conscience, and religious emancipation, and in political liberty, is to be regarded as a new responsibility of self-knowing life. It imposes the duty of self-control so that the social machine shall keep and use its great power. It exemplifies too the reality of progress as a still living impulse, and emphasizes the need of not only good work, but of better and continually improving work.

In short it shows us that the regressive phase of evolution has after all its place in the scheme. It is the lot of those creatures who are outstripped by their fellows. We have seen among the simplest living creatures some which stand still, apparently since the dawn of life, while others which once were like them proceed upward. We see some others who, reaching upper grades, not only fail to continue, but degenerate. Degeneracy of inherited form has not been reviewed biologically here, because it is so complex a subject, and because its general effect as a process of nature can be sufficiently described as regression. It is a slow reversal of the cumulative progress of evolution; which may again reverse, for even such regression may be a path into an upward evolution of new character.

This sketch of the trusteeship of biological heredity, built upon a primary observation of life of low consciousness, and carried thence into human aspects, shows again in evolution, what appeared in the lesser life; the super-position of one law upon another. Conduct controlled continues in part, and another part is emancipated, but not the whole. The law of free conduct is added to, and does not displace, the law of controlled conduct. Whether the control partially escaped, is the unseen environment of the blind, dumb consciousness of lowly life, or whether it is the control of humanity by human wisdom so great as to take supernatural aspect, and to compel faith from lesser intelligence, there is never such emancipation from control as to leave conduct irresponsible. There is simply a transfer of control from one place of issue to another. In the first case it transfers from the unreasoned happening of chemical reactions, to the

volition of a reasoning intelligence; and in the second from instinctive reliance upon the reasoning intelligence of a leader, to a judgment by the reasoning intelligence of the performer. But the idea, which will at times arise, that liberty means conduct uncontrolled, is a mere aberration of impulse. It is one of those happenings which make it seem that variation is accidental, because it is a variation which frequently appears, in spite of the repeated proof that it is inevitably self-corrective. Perhaps its recurrence is due to the fact that the remedy applied by nature is not usually a cure or palliation, but extirpation.

CHAPTER XVII

TODAY IS ALWAYS THE DAY OF EVOLUTION

We have seen that even in the self-conscious intelligence which distinguishes man, the primitive conduct still persists in part, and the higher conduct develops as an added faculty; and the higher law becomes more complex by including the lower. Evolutionary progress of early phase is thus modified without being superseded, and life still evolves its new phases strictly subject to present necessities. And, although there seems to be a marvellous adaptation to future needs, in the organization produced at any age or period; yet it becomes clear that this is still accomplished by impulses which exist independent of any pretense to foresight, or even to preparation; which are the human privileges of consciousness. There is, in all natural and acceptable environment, a continuity which is more or less reliable. The building upon a past which has endured for some time, is done always in and for the present; and it fits the future because the future is a continuation of that same sequence. The present is always considered. If change of conditions has appeared, that change is represented in the evolution as soon as it is present, but never until then. But this is not to be confused with that development which is a repetition of cycles or periods. In nature the unreasoning creature

does develop in advance many things in preparation for coming needs. The warm blooded animal grows fur, and stores nutriment, as winter approaches. The embryo in the egg, and the parent producing the egg, show certain transitional activities anticipating others to come. But these are all repetitions of things which have been done before. This is redevelopment of a formerly established course of behavior, now being repeated to suit circumstances which are repeating. But in evolution we are specially limiting reference, to that which produces new things, new actions, and new forms. Some of them suit new conditions; but it is as surely true that some of them do not, and this is the ground for supposing that these are produced without foresight or any anticipatory value. All these variations are as results of the past; all are affected by the present; some will be valuable in the future; but the present value is the standard by which it is decided which variations are to be added to the heredity and which abandoned. Never is a new thing biologically adopted in the face of present disadvantage, because of a possible future benefit. The possibility of the future is never so great a factor, as the certainty of the present; or the still greater certainty of the past. Even the facility for variability, which seems to prevail in certain species, as a provision for a frequently changing environment, is not anticipation, but is obviously a product of the frequently changing past. In brief, the new results of biological evolution are produced by past and present life and environment, and not by prescience of the future.

This is so invariably true of life not self-conscious, that

it affords a lesson to self-conscious or human motives. Having in view the principle so often and so well supported elsewhere that progress builds up without displacing, it appears true that the ability to anticipate the future should not be used to give that view undue importance. The present is still the time of action. It is true as ever that the past is gone, and its character, even if to be better known, is never to be changed. It is still true that the future can only be imperfectly foreseen. Our efforts to look into it are after all only the same efforts in conscious doing, which lower life makes unconsciously. We still must proceed supposing that the sequence and consequence which have been and are, will continue in the same way. That is the only method reason has of seeing the future, and it does not modify the conduct motive, except that it perceives its existence, and its base. It remains true as before that knowing the past, and expecting a future according to it, the proper conduct, the conduct upon which life depends, is that most perfectly adapted to the present environment by rightness and fitness. We cannot live next year unless we first live today. Our gift enables us to anticipate the consequences of our conduct only by perceiving the law of its relation to the future, and not by perception of that future itself. We add an uncertain view of the future to our motives, but this in no sense justifies a disregard for the present. Although consequences will in part rest in the future, yet for activity, today is always the day of evolution.

CHAPTER XVIII

HUMANITY IN LIMITED PRIVILEGE

In a final reference to the methods of biological evolutionary production of the higher living organisms, it seems well to note the occasional revolutionary activity in an otherwise continuous change. We have already observed the radical change in the nature of that progress, which occurred when sexual conjugation enabled the germ-plasm to associate with it descendant cells of specialized duties to build up complex bodies. In this there was a new departure, involving possibilities which before then had not appeared.

Then again when the appearance of self-consciousness in man, gave him the knowledge of his relations to others and to the universe; and thus, in part, the knowledge of the universe itself; and awakened the aspirations of psychological reasoning, there was another entirely new phase of advance. It is not to be supposed that a new impulse was originated. It was the old impulse, which had always been active, reaching a new aspect, and endowing matter with powers of new form. The life in matter reached a stage which was, for it, radically new.

And again in that same direction of intellectual perception, the guidance of human activities by more of intellect, and less of materialism, and of remoter and moral purposes,

instead of nearer and baser impulses, enables the associated action of larger and larger numbers of men; and so achieves the great and greater effectiveness of human power, in civilization, as compared with that power uncivilized, or as against the brute powers, and the naturally hostile environment. This too, the activity in free and voluntary unison, is a new phase, and marks an era in social organization.

And in biology there are other instructive facts of the same kind which show that the basis of all such evolution is in a common law. There are long enduring types, running into innumerable changes, of close relationship; which are seen bursting into a comparatively sudden evolution of a new type, as if by some new impulse. The appearance of the vertebrata for example after long evolution of invertebrates, is seen in the geological record to have opened up a new morphology. And embryology too supports this evidence, with a discontinuous, or two-phase development, which has even suggested its possible origin in an alternating species. The symmetrical and axial motive of form, beginning in an old type, reaches therein a certain definition (the gastrula) and yet later this disappears in a new axial symmetry arising within it. It appears that a revolutionary variation came into sudden preference. It seems as if that impulse then rapidly achieved the main character of its new creation, and as if then the creative power entered upon a long series of selective and of merely adaptive variation. There are now few evidences of present evolutions of original features in vertebrate life forms. There is active modification of limbs and organs and of things which the past has already established in a kind of completeness.

It seems probable that a distinct impulse under new environment, giving great new advantage, develops a general plan of structure quickly, and then submits it to long continuing modifications by which adaptation to environment is preserved and increased. But the discontinuous character of the chain of related forms, shows that many such results were of transient value; and the separate genealogies of the great divisions of animals, clearly show the existence of several plans of structure of almost unrelated origin.

There are, moreover, in the embryology of animals, revelations of origin, which would never be suspected from the present status of the mature animal. It appears clearly in these cases that evolution upon a certain plan, has proceeded to a certain position, and then has changed completely. Sometimes progress toward a high type is revealed in the early development, only to be succeeded by a backsliding into low conditions; as for example in the Tunicata which begin life much as do the higher animals; and develop organs which later degenerate and disappear. Then again embryology discovers developments which follow a certain plan, in symmetry of a certain kind, and then abandon that form, for a later evolution of an entirely different symmetry, reaching a high grade of structure by giving up the one first begun and taking another. There are many well known examples of larval life in which a creature, perhaps fish-like and water breathing, abandons organs well developed, and begins anew the structural work found wanting in new circumstances. These facts show that there is no privilege of type, even in high evolution, except by continued efficiency and fitness, and that no type or order of structure is perfect

and final, but all fitness is to be maintained in relation to environment, which is itself liable to change.

High organization is an equipment reached under certain conditions, and prepared for such conditions, but if other conditions ensue there must be prompt response in the production of other organization. Only by this course of continued fitness is survival possible.

It must be noted too that the consequences of fitness or unfitness, are graduated in most wonderful way, to materialize the value of the activities of the individual considered as a trustee of his race, and not as an isolated mortal. Fitness inherited is an equipment granted at birth, the accumulation of reward for ancestral right action. With this the individual normally secures a term of life, conditioned only upon a compliant, and almost automatic, obedience to the traditions and instincts of his kind. But mere submissive response does not mean progress. If conditions remain favorable, such response may secure continued life in the position and degree inherited. But if the conditions change then some active adaptation is necessary, even to maintain the inherited position in the scale. The lack of this activity will induce or permit degeneracy, that is, the loss by atrophy of organs no longer exercised, without the evolution of any new ones to replace them. The activity thus demanded is not necessarily self-conscious; the variation of lower life may perhaps arise from conduct which we can call good; it may arise as a consequence of that goodness, or it may not; but in either case its survival visibly rests in a selection, by circumstances which premiate the adaptable forms, at the expense of those not adaptable; and it must be recalled

that environment must be considered changed so as to call for variation, when increase of numbers of living competitors makes the struggle for survival keener, even though the outer circumstances continue favorable. Thus even great prosperity may require upward evolution, in a contest where not merely the fit, but only the fittest, of races can continue to exist. The great difference between the lower conduct under this impulse, and the higher conduct of humanity, is, that the former must venture into variations without any conscious purpose or foresight, while man with his consciousness of self and of motive, and of cause and effect, and with his perception of moral consequences, can shape his conduct according to a previously seen and probably good course.

It is not clear, however, that the unconscious variation of the lower grade is mere accident. Although we do not now fully perceive the law, there may well be one by which the right activity in one circumstance, does give a beneficial direction as well as increased energy to the variable heredity. For humanity an indication of rightness evidently lies in the moral perceptions, and this encourages a belief in this as the only natural guide, which is not justified. Non-psychological life without it, may be and probably is, advancing by variations which are well ordered in a lower plane.

One achievement of morality is the higher type of activity in the great units of human organization, in the nations and races, and alliances of nations. This achievement consists largely in the growth of freedom of conduct as compared with compelled conduct. Political liberty is not merely political. We have seen that it is a moral evolution, of

which the rightness lies in the increased efficiency of the social machine; and that the individual energies, conducted aright in freedom, are capable of higher achievement than the same energies would be in the same course under compulsion. Now this phase of progress we see effectively and rapidly proceeding; so that, as its influence spreads, civilized men become in co-operation stronger against the adversities of nature and of barbarism. This advance is an intellecual evolution, that is to say a variation, by increase and spread of mental power of perception. Morality of that kind which begets right conduct, in subjects under the influence of faith and love, with but small intellectual capacity, may exist and operate in a controlled type of patriarchal conduct, but the right conduct of freedom, arising in the cultivation of intellectual power in all the subjects of it, instead of in a few masters or leaders, is obviously a higher type which preserves the previous one, within a grander unit of greater capacity.

When we consider these tendencies we must perceive that the present activity of human evolution is directed less to the grosser physical equipment, and more to that qualification which separates man from all the rest of nature by a wide pre-eminence, that is the mental power of self-conscious morality; and the perception of it. And at the same time we must see that there is nothing in this pre-eminence, which justifies satisfaction with it as a permanent condition, or which promises the endurance of its privileges except in continued growth.

CHAPTER XIX

HUMAN CONSCIOUSNESS

The advances seen as the products of past evolution indicate the progress to be expected in the future. Human progress is characterized by its being a self-recognized progress. It is an intellectual advance, which begins when the intellect first perceives itself, with a realizing sense of what it is. This perception or as it is sometimes called, "apperception," begins and continues a conduct motive radically new as compared with the older ones, just as we saw in historic biology new material motives made radically new structures.

The recognition of self, is a perception of the separateness, or difference between self and others, and it therefore necessarily includes a recognition of others, and leads to a knowledge of their points of similarity, as well as their points of difference. Now, without entering into a psychological view of this mental power, we may study in it the persistence of very important evolutionary laws. We may observe that in discovering one's self to be a reasoning, thinking creature, one also discovers the similar life qualifications of others; and understands that the world is not merely a compound of only two parts, the thing which perceives being one part, and the aggregate of things among which it lives, being the other part. It is learned that every

other conscious being in the world also divides the world thus; but only the self-conscious beings know that they do it. Animal consciousness knows the world in its way, but the human mind not only knows the world, but knows that it knows it. Now in this there is a new birth of perception, recognizing community of interest, and a new motive to co-operative conduct.

And instead of merely possessing a set of impulses arising from heredity and education and experiences, all of which things are impulses based upon the past, this new self-consciousness begins a mind which concerns itself with a future that is not the near future which mere volition and will have in view, which is about to become present; but the remote future where last final consequences will develop; and in which the other minds will participate, as they now participate in the consideration of it. All this is, however, subject to the earlier law that new and higher principles are built upon or added to the old and do not supersede them or nullify them. It is thus seen that not only is the old principle of co-operative activity reaffirmed, but it enters into a new and higher phase. The self-conscious mind may select conduct, with foreknowledge of the true path, instead of following blindly all avenues, and finding survival only in a few, as does the consciousness of lower order. With this possession it becomes possible to face the forces of nature and the hostilities of environment, and to shape a collective course or policy by which these hostilities may be mitigated, and some of them, which arise in destructive competition, may be ended entirely. The evils of destructive rivalry are now seen, by the perception of the fact

that the rival human being is an equal and fellow; then it becomes possible to cease the destructiveness of rivalry and substitute co-operative agreement, and this alone terminates a large part of the hostile environment. Nor does it overlook the fact that hostility of environment continues in nature, nor the other fact that a stimulus to improvement arises in adversity. It does not disavow self-preservation, but discovers a new and higher way of self-preservation; the way of alliance in construction, instead of contest by destruction; and if it relinquishes the cultivation in evolution of destructive power, it does so only to take up the evolution of a co-operative power which is more effective.

That this latter power is more effective is proven by its triumph and survival in trial. In the present partial and imperfect adoption of the co-operative motive by intellectual humanity, there has arisen a power which, in comparison with that of the more brutally impelled races, is overwhelming and convincing. And even for the aggressive efforts at self-preservation in rivalry, the races most effective are those which have, among themselves, best evolved the principle of co-operation; and the successfully destructive ones are those which have modified their policy by a considerable development of its opposite. Further, this compounding of motive is evident in all grades of organization; none is pure, but each has character only by a preponderance of this quality or that, in a mixture of all.

So it is clear that the graduation into intellectual life is imperfect, like other evolutionary changes, and it is after all not an escape from more primitive law, but a recognition of new and higher expressions of the same law.

Therefore, as this intellectual and moral evolution builds up co-operation into higher phases, it does so by bringing into self-knowing and known relations, larger and more complex units, whose component individuals still act under earlier law in simple conduct, while governed by new law in their organized being.

The complexity is a result of progress, and in its variability is a means toward more progress. The appearance of an inspiration for its highest practice and definition, and the cultivation of that highest desire in ideals of altruism, is one of those variations which arise purposeful and conscious, in psychological humanity, to better perform the same things which in lower life are fortuitous or casual and unperceived.

But although different in origin these variations of conduct under psychological impulse, are in nature tested by the old standard, still unchanged, which is that of value for the purpose of self-preservation. The survival of the fittest is still the final result of the comparison of this variant in conduct with others; but it is a question of fitness which includes defensive power as needed for present maintenance, and which proceeds against any unit organized for, and acting in, destructive contest; by opposing a unit organized in mutual cohesion, and acting preferably in extended co-operation. The triumph of the co-operative principle is as evident in human evolution by race contest, as it was in the biological evolution of multicellular animals. Of families, tribes and nations, or whatever units may be compared, that is the strongest which has the least destructive impulse, and the greatest co-operative impulse. Among units

of equal co-operative impulse, that one is the strongest which has the greatest capacity for organization, and the most unity of purpose when organized.

This superior strength is available and effective in defense, and even in aggression, when so applied under compulsion, by the still active forces of older type; but much more is it effective in its particular mutual purposes.

Now in this view the struggle for existence may cease to mean aggressive self-maintenance by the actual abasement of rivals, and appear as an equally effective maintenance in comparative superiority by higher evolution of self. The survival of the fittest is evidently an abiding law, but it does not forever mean fitness by destructive capacity. Physical force is a provisional qualification which suffices in a life lacking intellect, or wherein co-operation is slight; but which goes down into disuse when mind discovers the value of mutual alliance, and of unity of purpose; and marshals the overpowering numbers of its new units of conduct.

This is the tendency which promises to promote humanity to higher attainments by future evolution acting in the same way that prevailed in the past, as revealed in the geological and biological records.

CHAPTER XX

FREE ACTIVITIES

And again the intellectual power helps to establish a higher efficiency in co-operation by enabling its activity to be free. That great organized co-operation of nature, which biology discovers in the grouping of cells in ordered functions to make up a complex and powerful body, has been carried to a high and perhaps to the highest effective evolution of that type. In size and armed strength certain great animals have reached probably the limit of power of that kind, and yet have yielded place, in struggles with much weaker creatures, co-operating in the militant struggle for existence. And the best armed of them have failed, or are now failing, probably from the very excellence of their equipment, in a function which is outclassed by the higher one. It is not to be suggested that pacific conduct is new. It has been seen that pacific co-operation is primal, and precedes the struggle for existence, which begins when crowding makes rivalry. In the beginning the growth of life in a generous and extensive world is not a struggle, but an enjoyment of prosperity, in which the hostility is external, and is due to changes of natural conditions, such as heat and cold, and violence of elements and such like events, disturbing the peaceful field in which new life is growing.

This may still be observed in the growth of single-celled life. We may know that there are creatures which never departed from the pacific co-operative principle, to take up the aggressive and destructive one. This motive always has governed many races of gregarious peaceful creatures, who have maintained themselves at least as successfully as the militant. Therefore there is nothing new in the pacific mode of action, it is the oldest. The new function now to be looked to for future progress is the reasoning, in knowledge conscious of the value of this mode, and of its relations to itself. In this endowment it becomes possible to unite in mutual support thousands upon thousands of persons, acting under the guidance of a moral purpose. This means the creation of a new conduct creature, operating in a new sphere. It is greater and also higher, than that co-operation by similarity of instinct, such as is shown by the gregarious animals.

Instinct develops altruistic action in high degree. But the gregarious harmony is based only on the past, and presents a successful survival of fitness. The new form of altruistic co-operation frames its purposes in the future, exercising the new power in addition to the old.

Thus we find man with moral consciousness able to organize units of conduct in a high order, which we may still call new, because it is even now but partially established, the order of free moral unity of purpose. But we still see humanity engaged in conduct and in organizations of mixed types, partly free and partly compelled. Conduct is still partly self-controlled and partly governed by superior force; but the supplanting of the older method by that of self-con-

trol and freedom is no longer an empty ideal, it is a rapidly growing reality. When we consider the political and moral liberty of the democratic and progressive nations, and their freedom of conscience, and the respect for individuality; and above all, when we observe the essentially altruistic faith, by which the stupendous industrial and social work of these nations is done; in the contest with the hostility, not only of other men, but of nature; and the adversities of climate and disease—it is clearly apparent that we are in the process of an evolution of morality in a phase to be called new. It is because of its freedom and general willingness, that we fail to appreciate much of what is here called altruistic faith. The daily life of the millions of laborers and traders, and even of the so-called sordid workers, calls for the exercise of altruism, and depends upon a high faith reposed in others. The miner and the sailor go into positions where a breach of trust by others, would expose them to death, and those others of their class know it, and do as they should. The engine driver running at headlong speed in the darkness, trusts his life to those who guard the track and signal his course; and more than that, the passengers, who have no class affiliations with these guardians, and no knowledge of them except the racial and social impersonal knowledge; show the same confidence which is almost never disappointed. The traders deliver their possessions, and take a word or a signature, in pledge of a faith which rarely fails. All these things are done in liberty, and depend upon free altruism, self-controlled by reason, and not by fear. No great population can be organized in militant compulsion, and compelled to do these things. The operation in

joint trust, and upon mutual credit, are not to be forced. They can be done perfectly and fully, only in the free willing confidence of the co-operative conduct motive. It as necessary to the ordinary work as it is to the loftier sacrifices. We know the value of the altruism of charity and of medicine, and of devotion to science or to patriotism, but we often overlook the fact that modern civilization depends in its daily routine upon a sense of duty, which is a new order of morality, because it is self-governed and free, and cannot be compelled.

The value of liberty lies partly in the greater efficiency of the energy of free units, and partly in the greater opportunity it affords for variation and progress. The first benefit, efficiency, arises in the fact that labor done to accomplish a purpose concurred in by the worker, is more enjoyable and energetic, and better qualified, than would be a labor desired by some controlling mind and forced upon the laborer. Where men are free to select their work there will be a certain degree of special fitness for the work; and in the division of labor among specialized laborers, which we have seen in biology to be an evolutionary process, this special fitness is a necessary thing for the organization of the great units of Humanity. It is obviously an imperfect allotment of work if special duties are imposed upon those specially unfit. A certain gain arises in the separation of functions, even without specialization of powers, but efficiency is clearly advanced to a higher grade, by such special qualification; and happiness and gratification of just desires follow.

Whether this is a benefit of moral nature will depend

upon the labors in question, but it can be accepted that in any effort for morality, an increase of efficiency is an increase of moral power.

The secondary benefit is also distinctly moral. The opportunity for variation, which lies in freedom of conduct, and especially in liberty of conscience, is a way to moral progress. There is moral goodness in active conduct directed by faith, provided the faith attaches itself to worthy influences; and there may be moral goodness even in obedience without faith. But these moral efforts, although they may produce good results as the fruits of their existing order of things, must rely, for any advance into higher order, upon progress on the part of the few leaders; while the experiences, and aptitudes, and knowledge, in practical inheritance, arise and develop in the performer or worker. Thus this first unit of activity, which is composed of a number of separate beings combined under control, is not responsive to its own experiences, and is not likely to be improved or advanced, unless a less efficient unit is in immediate comparison; while freedom secures more variation in response to experience, and therefore more new progress, at a loss of some unity for purposes which are passing. Thence it appears reasonable that in certain matters of established type, as in military operations, great unity is still preserved by strict control; and upon occasion the voluntary submission to control is seen to be still practiced. Thus the newer free process amplifies the old, and in liberty, as in other things, conduct remains a complex of all motives in process of evolution.

The further study of this subject reaches into a philo-

sophical aspect. We may close it by a recognition of the ideal of free altruistic democracy, as the highest aspiration, and its existing experimental organization as the highest examples, of the process of evolution, by which matter (and in the present study living matter) progresses in function from simplicity and generality, to complexity and specialty; while at the same time consciousness advances from a passive response to an active volition, and to intelligent control of the matter it inhabits, and so restores unity by progress in organization.

CHAPTER XXI

ORGANIZATION

THE great universal motive which impels evolution is organization. Under this governance the impulse which appears as energy works always for order. It is not a crude impulse under which worlds clash in cataclysm, but an inspired one which prevents clash by system, building up complexities out of heterogeneous chaos.—And in the subtle regulation of life the same system prevails. The simple beginnings combine always in disciplined union, to make new organized entities of higher functions.

The study of biology and especially of embryology is so fascinating that it continually appeals to the mind as a pursuit worthy for its own sake. Yet we must remember that here it is under observation only as a means to an end. We entered this wonderful field of thought only to garner a harvest of special purpose, which is the better knowledge of human evolution and destiny, as a guide to morality. It is true that modern biology offers, in its marvels, more of this information than any other science does, and this is a reason for a somewhat protracted study of them; yet it is clear that we are not here able to extend that study to any degree of completeness, although such a purpose will find a vast and always growing opportunity and reward.

The rise of life in evolution can be marked as a series of progressive steps in organization.

Association of protoplasmic units causing organization of the cell with the heredity principle. Then great evolution of unicellular life.

New association of cells, some in vegetative altruistic alliance; and others in aggressive and destructive competition. Then great evolution of associations.

New organizations of cells in somatic alliances, arising from the altruistic, with specialized functions and with increased complexity. Then great evolution of multicellular life.

New organization of these new somatic creatures in co-operation, and competition of those so organized, with those unorganized, and survival of those in co-operative alliance, establishing species. Then great evolution of species.

Selection and preferment by survival, of the higher species, in organizations of specialized individuals in mutual support, and especial preferment of those guided by an instinct of altruism in greater or less degree. Then great evolution of instinctive animal altruism, chiefly parental and tribal.

And lastly: The achievement of consciousness of self, and of relations with others, by the higher types of mankind; and the recognition of morality as a guide; and of altruism as a principle of morality enabling liberty of conscience and freedom of conduct. Then great evolution of human organization in political and social units in new and higher spheres of conduct.

The conscious altruism of the last phase; the highest

system of conduct arising among men; is based upon the same physical principle of conjugation by which benefits are generalized in lowest life; and rising thence it shares the motives of lower life, until it differs in being recognized, and responsively inspired, by a self-knowing consciousness, enabling a perception of consequences.

Thus there may be traced a continued growth of the all-prevailing principle of organization ever promoting association for co-operative activity, which stands revealed as the great and dominating conduct motive, not only of humanity, but of all life; increasing in value as it ascends the scale and presumably to increase indefinitely toward an ideal unity. Organization is the expression of the law of the first cause, working from the inert and simple unity which is primal, toward the active and complex unity of harmony which is to be perfect and final in infinite time.

CHAPTER XXII

SUMMARY AND CONCLUSION

THE preceding pages attempt to show certain facts, evident in the modern sciences of evolutionary research, which are of stupendous import in the consideration of human conduct. Some of them must modify greatly our conceptions of the rightness and wrongness of conduct, and will give a new aspect to our oldest ideas of morality.

The most important truth thus newly revealed is the immortality of the germ-plasm. It is seen, in wonderful significance, that the material substance which, in the egg or germ, ceases alliance with a mature body, and emancipates itself to regenerate a simliar body, is part of the same substance which began the life evolution of its race in the far remote past; and which has had, in all the intervening ages, continuous life uninterrupted by death. And following this truth comes the corollary, that in the equally remote future the material substances then living will be those which shall have continued from now on, in that immortal progress.

It may be objected to this inference, that new life may arise in a new series. This cannot be affirmed or denied, yet it must be assumed that new life, if possible, must arise

in its most primitive form; and rise by the same evolution, of capacity from potentiality to realization.

And it is of great moment that, in the present status of this highly developed life-plasm; its fundamental form, that in which it reappears at each new birth; is the same form that it possessed in the long past earlier stage of its organization as a single living cell. The germ-cell today, at the beginning of each new generation, presents itself stripped of all the somatic body, bared of all the past, and having only the structure and substance of the single-celled immortal creature, which it was millions of years before, and which it now is again; except that within it, carried in minute differentiation of the protoplasm of its nucleus, is a mysteriously condensed record of its ages of experience; a treasured heredity, to be used by it in perpetuating its ability, and in restoring the material machine, by which its existence may be continued.

Now all this is simple fact. We have used some few imagined links to connect up some of our imperfect chains of positive knowledge, but there is no such weakness in this particular chain. The potential immortality of the germplasm is a proposition based upon observable undeniable fact.

Next it is important to note that this immortality is not absolute, but only potential. Matter is not guaranteed in life perpetual by natural law, but only empowered. Continued enjoyment of life is not a certainty, but it is a possibility, which depends upon the way in which that life maintains itself, in the face of hostile circumstances.

Every living thing stands a testimony to the fact that it,

and all its ancestors, one after another in direct line, have succeeded in preserving the gift of life, from primeval origin, through the ages, to this day. The question of its future continuance and perpetuation now rests for answer with that living thing who is the present trustee of the gift.

But beside the possession of this life-gift in potential immortality, every being of high organization is possessed, by inheritance, of an ability to construct a body, by which it may exercise great future extension and specialization of its primary powers. This constructive ability has been slowly added to it, little by little, by ancestors who have succeeded in doing, from time to time, something more than the mere maintenance of existence; and have accumulated a surplus as the product of their energy; and have transmitted, it, with the evident possibility of its being still further improved, and still longer transmitted.

Therefore it appears that the conduct of an individual, which was before examined in the light of the lesser or individual life, and was found to lack there completeness of scheme, is to be considered as applying to the continuous life of this substance which is the real owner of the body, and the real responsible ego.

In this light an individual human being stands not as a short-lived fugitive creature, empowered to beget other similar short-lived irresponsible offspring; but as an ever living creature, in possession of a destructible body, which he is enabled to discard and renew periodically, because of its destructibility. In life thus viewed, it is possible to trace a chain of consequences by which all conduct is compensated, not in a system of reward and punishment such as that

by which humanity seeks, by intelligent intervention, to make just, a natural sequence which seems to be inherently lacking justice; but as a law of cause and effect, self-adjusting, and inevitably just. Under this law, continued life potentially immortal is the consequence of certain conduct, and death and extinction the consequence of other conduct. The conduct sustaining life must therefore be called good, and that which fails less good. And the conduct which sustains and uplifts life perpetually is the most good. This best conduct is moral, whether instinctive or reasoned, and the perception of it is morality. Conduct may therefore be of imperfect morality, because of insufficient regard for remote consequence, or may lack goodness, and be relatively bad, because of ill effects. But such conduct is not necessarily evil conduct. Evil conduct must be worse than imperfect where none is perfect. Evil conduct must be the bad conduct which is injurious positively, with a purpose and intent which wilfully disregards morality.

Life continuing is an endowment of positive and not negative nature, whatever its degree or form. The possessor of life of any grade, is one who has received, and is receiving, that much of surplus, of positive over negative, and may receive more, not as a right, but as a privilege. Some we see receive much of that privilege, and others little; some receive it of high degree, and others of low. Yet all are recipients and therefore debtors. None are creators or creditors, except toward their own posterity. Thus it appears that the enjoyment of life, for a time or for all time, does not come with any title guaranteed, but only with a permissive equipment; which, having sufficed for all gen-

erations, in all ancestors, is now presumably sufficient for the creature in the present. With this equipment the success or failure of the creature is given in his charge, and all the life extant upon the earth is that which has maintained itself upon these terms, in the face of besetting difficulties such as hostile environment, and competing rivals.

And we see that while some creatures succeed and prosper, others of the same race, fail and die, because they happen into environment which is too difficult for them. This, which appears to be an injustice if argued in relation to the lesser life of the individual, is made evidently just and consistent by the fact, established by study of the greater life in evolution, that the two groups (that which lived and that which died) were but two parts of the same creature. One part received much; but the other, preserved to receive more, was comparatively better qualified, in being more favorably established, to continue a racial life which was equally represented in either.

The development of the argument of universal justice must be referred however to the province of philosophy. It has sufficed now, from analytic study, to point out that evolution, which rewards in the descendant, conduct accomplished by the ancestor, indicates clearly that the justice evident in the greater life, is and must be, imperfect or incomplete toward the lesser or individual life, because of its relations subordinated to the larger units, and this is as we inferred from a search for justice in individual conduct.

But if we contemplate a conduct unit of living matter extended so as to include in one judgment the several individuals of the same lineage, and the many branches of the

same germ-plasm—we find that such units of greater life do receive, in the consequences of their conduct, a compensation which is just; and this, we perceive, consists in the continuing, and improving, ability to live. We perceive that it is idle to protest, in terms of our human judgment, against a law of conduct which made us what we are, and gave us all the intelligence we possess; and we therefore must accept the success and endurance of this conduct, as proof of its rightness. This law continues to govern, and promises, in its operation, to so increase these gifts of knowledge that we shall, in our future wisdom, see in its growing justice, an improvement toward perfection always approaching the absolute. It is profoundly interesting to note, that the tendency and effect of all progress by evolution and its aids, is to bring this natural justice nearer to the ideal; and to make it surer for the smaller units, and even for the individual. Human reason, rising in the scale, tends to secure for each individual, by the machinery of civilization, a due share of the benefits and effects of the general conduct. Justice is now available for individual persons, which formerly pertained only to powerful families; and is found for families, with an effect which, until lately, only nations could enjoy. In other words the imperfections of natural justice toward the individual, which appear in the nature of the non-psychologic life; are parts of the natural hostility of environment, and are in course of eradication by intellectual evolution; and the whole course of evolution must be regarded as a process still in progress, and with at present only an imperfect result.

We have observed moreover that the progress, in the

evolution of lower life without self-consciousness and morality, is achieved by the trial of many variations, and by the extermination of the unsuccessful, and the survival of the successful; and also that the variations in this stage cannot be definitely attributed to any foresight, but only to a right reaction to environment then present, evinced with a presumption that it will continue. We have further observed that the achievement of consciousness of self, and a knowledge of relations with others, and of cause and effect, and, in short, of good and evil, is in fact a realization of the probabilities of the future as well as of the present; and we see in that a means achieved, whereby conduct may be varied for progress not merely in blind experiment, but in reasoned prospect of its benefits; and we see that an extension of the previously recognized idea that conduct ultimately beneficial is moral conduct, leads to the idea that an increased perception of the effect of conduct, is an increased power for morality.

But that increase of power or potentiality is not to be confused with the question of achievement. Intellect is a means to morality, and an enlargement of perception; but it is not morality, nor does it even enlarge morality, unless the greater perception is translated into volition and energy and moral accomplishment.

And we see that the greatest of this wisdom is still far short of perfection, and is therefore not infallible. And that the least of it is still that which has so far sufficed to enable its living possessor to survive, and by which he has a right and duty to guide his own activity. This right and duty, even when pertaining to inferior capacity, we per-

ceive to be the foundation for liberty of action, and consequently for freedom of conscience, and we therefore recognize in personal conscience, the supreme and final expression of that which guides voluntary energy on the part of the individual.

We recognize that the acquirement of high organization is, in any creature, the result of a long accumulation through heredity of organs and habits and abilities, from time to time added to the stock; and we see that this process still continues, and that it results in not merely a continued adaptation to circumstances; but more than this, when active, it produces a more complex and higher organization, in which however the simpler and older persist as the groundwork. By study in the fields of biology and embryology we see that with every new birth the creature, whether human or other, returns to the primitive simplicity of a single cell and develops a body anew upon the old habits with certain changes. These changes may be accidental or casual, or they may be the effects of activity and environment, but in either case, they are at first tentative, and are later adopted into the hereditary habit only when they are proven beneficial, by the survival of many possessors, and by the continued use of them.

Then we have discovered that the effect of conjugation and sex union upon such variations, is a distribution of any established benefits among all the race, or at least among those in local contact; and thus a preservation to the race of uniformity of organization. The effects of the same process upon conduct, are thus to promote co-operation, and to make possible effective conduct units composed of many

individuals, united in harmony of purpose. The power of these greater units as compared with that of the lesser units lacking co-operation, is shown by the survival of species of animals achieving them; and, especially among mankind, by the ascendency of the races so actuated, as compared with those practicing more generally destructive or aggressive rivalries.

In this we have perceived that the continued function of evolution is the procurement of greater and greater power for the preservation of life, by the raising of organization into higher and higher phases. The sex process we find promoting first the multicellular body structure as an individual organization; and then the many associated individuals as a social organization under instinctive altruism. The intellectual power we find promoting still higher organization, by perceiving in advance remoter benefits of greater worth, and setting them above immediate benefits of lesser worth, and so appreciating morality; and again we see that self-conscious intellect increases effectiveness, by making for liberty; and that all of these intellectual things are advances, and are adopted into the progressive evolution, because they make for the preservation of life, and prove it by the survival of those creatures which evolve them, just as did the physical advances.

And lastly we recall that there is in general conduct a persistence of the earlier responses and impulses, which are not entirely superseded by the later motives and desires, but which still remain among the factors in the conduct of life, and still affect the lower strata of conduct of higher acquirement. And in consequence it appears that human

conduct in its highest phases still contains necessities and motives and impressions and responses of low order similar to those of lower life, and in fact persisting as the inheritance from life of that degree.

Therefore conduct is not, in the present transition, to be valued by any assumed standard of a perfection of morality; but is by nature rewarded or compensated by comparative consequences, having regard to the participation in it of all creatures related and organized with the actual performer. In this uncertain light an individual must conduct himself aright by his own conscience because that is the only available guide, the only expression of his complex motive. His conduct is the activity of the immortal ego individualized in him, allied and sharing with his lineage, and his race, and his humanity, in a proportionate interest, which assures inevitable justice in final effect to the whole; and promises in evolution increasing justness toward every part. In the natural law of conduct, justice is a principle which is established for the life of the world in its unity; but not for each unit in its complexity. The subjection of matter to life is a process which is indefinitely incomplete and imperfect. By evolution it is continually advancing, and by the latest evolution, which is the perception of morality, this process is restoring to humanity the unity of co-operative altruism. In this unity is the promise of justice for the individual, such as is now made evident for the whole,—and the prospect for the race, of a future which shall transcend the present, as this is seen to rise above the past.

Thus the study of evolution, in geological and biological

and embryological sciences, supports and confirms the conceptions of the morality of nature, which were founded on a study of conduct.

THE END

INDEX

CAPITALS INDICATE HEADINGS

A

Abandonment of old bodies, 265
Abilities added, 142; imperfect, 11; special, 110
Ability use of, 16
Abnormal responsibility, 244
Abundance, 151
Absolute, 5
Absolute good, 284
Absorption, consuming, 347
Absorption of invaders, 206
Acceptance of help, 34
Acceptable wisdom, 226
Accessory body, 129
Accident, primary death an, 80
Accidental, is variation, 388
Achievements, 192
Acquired characters, 58
Acquirement of habits, 64
Activity is of the present time, 381; religious, 241
Accumulating development, 57
Accumulating knowledge, 248
Accumulation, 279
Adaptability, 89, 293; quickened by short-lived fecundity, 87
Adaptation, 75; without foresight, 381
Adoption of militant rulers, 205
Adoption of self-sacrifice motive, 188
Advance, human proceeding, 389; way of, 123
Advancement, freedom promotes, 399
Advantage in death, 80
Advantages of sex, 356; to offspring, 154
Adversities, 35
Adversity, 392; a cure, 136
Æsthetic quality in form, 310
Affection, 49
Affectionate strength, value of, 189
Affinities, 259, 346
Affinity, natural, 62
Afflictions no longer terrors, 195
Affluence and neglect, 109
Aged guarded, 192
Age of the earth, 292
Aggression, 146; favors personal rule, 222; needs altruism, 155
Aggression, transitional, 175
Aggressive growth not necessarily, 153
Aggressive impulse, 172
Aggressive life, self-destructive, 146
Aggressive rivalry, 231
Algæ, 357
Alien warriors, 176
All circumstances considered, 117
Alliance of cells, 360
Alliances of creatures, 402
Allied groups, 104
Allies, 37
Alteration of conditions, 124
Alternatives, life or oblivion, 161
Altruism, 161, 163, 267
ALTRUISM A CONSCIOUS IDEAL, BOOK II, CHAP. V, 169
Altruism, aggression still needs, 155; is voluntary, 168
ALTRUISM FUNDAMENTAL, BOOK II, CHAP. II, 150
Altruism not of intellect, 170; sex maintains, 156
Altruistic acts, 31
Altruistic control is negative, 225
Altruistic, freedom is, 182
Altruistic government, typical character of, 233
ALTRUISTIC TYPE OF GOVERNMENT, BOOK II, CHAP. XIII, 219
Amalgamation, 351; of heredities, 363
Ambitions, 223
Amitosis, 325
Amputation not transmitted, 367
Ancestors all have succeeded, 406; position due to, 107

Ancestral pattern, 63
Ancestral virtues, 112
Ancient religions and morality, 248
Ancient rocks, 296
Ancient superiority, 202
Anger, 61
Animal character resumable, 112
Animal existence, 24
Animals, 85; morality in, 52, 54
Answer of matter, 135
Anticipation, none, 291
Antique methods, 240
Antiquity of life, 132
Anxiety not demanded, 110
Any change is possible, 125
Apes, 309; relationship to, 203
Apology, 6
Appeal, 164
Apperception, 390
Aptitudes completed by education, 247; cultivation of, 128; transmitted, 246
Arabs, 176
Armed combat, 203
Armed force, 174
Armed strength of animals, 395
Arms, resort to, imposed, 205
Arthropoda, antiquity of, 311
Ascendancy of gregarious life, 174
Ascending progress, 135
Aspiration, 169; for higher ideals, 264
ASPIRATION IN EVOLUTION IS MORALITY, BOOK III, CHAP. XVI, 374
Aspirations, 159
Aspiring, life is, 375
Assimilation, 324
Assistance, 229
ASSOCIATED MOTIVES MULTIPLEX BOOK II, CHAP. VII, 178
ASSOCIATED RESPONSIBILITY, BOOK I, CHAP. VI, 39
Associates, advance of, 180
Association adaptation to, 95; needs morality, 40; of cells, 358, 402; success of, 175; unintelligent, 41; without similarity, 34
Attack, effects of, 86
Attendant cells, bodymaking, 360
Attitude, Nature's, 107
AUTHORITY, BOOK II, CHAP. XII, 214
Authority does not make rightness, 118; purpose of, 224; the final, 235
Autocrat, 221
Autocratic government, 223
Automatic law, 142
Avenue to progress, Death as an, 81
Axial forms, 385

B

Bacteria, 339
Bad, heredity of neglect, 109
Bad is that which is injurious, 12
Badness a deficiency of good, 59
Balance of account, 116
Barbaric conduct, 176
Barbarism right in its place, 147
Barbarous races, 143
Beasts in subjection, 162
Beatitude, hopes of, 285
Bees, limited to ministry, 161
Beginning of morality, 188
Beginning recedes, 317
Beginning the, how reached, 316
Belief in upward evolution, 194; liberty of, 239; must act on, 282
Beneficence of faith, 260
Beneficial change, 305
Benefit, 9, 12; desired, 116; in faith, 260; to peaceable, 30
BIOLOGICAL RECORD, BOOK III, CHAP. VII, 319
Biology shows all conduct mixed, 379
Birds, 47, 56; gregarious, 174; eggs of, 342; guard nests, 71
Birth, a creature at, 66
Blanks in the story, 319
Blending of motives, 178
Blind efforts, 161
Bodies, mortal, 364
Body-building is co-operation, 374
Body-plasm assexual, 362
Boulder falling, 14
Brahminism, 286
Brain capacity, 306; cells, 331
Branch of lineage cut-off, 157
Breeding, 294
Brotherhood, 29, 160; extends to race, 104; of mankind, 231
Buddhism, 286
Budding of germ-cells, 343
Burdens, 166

C

Cannibalism, 172
Capacities, inherited, 56
Capacity for organization, 394
Cardinal virtues, 210
Cataclysm, 149

Catastrophic destruction, 72
Catastrophies, 195
Cattle, controlled life of, 91; of plains, 173
Cause and effect, 407; in all events, 15
Cause of variations, 368
Celibates, 167
Cell, 128, 320; division, 347; heredity, 326; reduction, 356
Centrosome, 325, 353
Chance, 65
Changeable rightness, 267
Change all powerful, 308
CHANGE IS NORMAL, BOOK III, CHAP. IV, 304
Change is normally addition, 338; normal, toward complexity, 338; recurring, 306
Changeless environment, 312
Changes enormous, 124
Changing, man is, 285
Characters experimental, 337
Chemical unlikeness, 365
Chemistry, 319
Chickens, 55
Child-bearing, evasion of, 111
Child is dependent, 102
Children supply incentives, 110
China, 206
Choice of action, 8
Christianity, 286
Chromatin, 326
Chromosomes, 326
Chromosomes repeat former activity, 365
Citizenship, 229
Civilization, 385; comes of morality, 189; does not end question of fitness, 96; in its dawn, 176
Civil law courts, 240
Clan-unit gains by specialization, 166
Clubs, 217
Codes and laws, 268; not universal, 209; to be regarded, 117
Codes valuable, 118
Coercion unacceptable, 228
Cohesion of humanity, 150
Cohesive strength, 214
Collective conduct divisible, 22
Collective movement, 42
Collective responsibility, 144
Colloids, 311
Color, 335
Combinations, 232
Commendation, 171
Commerce civilizes, 212
Commercial faith, 261
Common enjoyment, right of, 180
Communism, 233
Community, 150, 250; care by, 165; of interest, 137, 391
Comparative goodness, 39
Comparative inferiority, 76
Compensated, is conduct, 12
Compensating awards of Nature, 199
COMPENSATIONS, BOOK I, CHAP. XIII, 107
Compensations, 35; automatic, 115; of conduct, 268; system of, 5
Compensatory Justice, 111
Complex circumstances, 21
Complexity of motives, 134; social obscures, 20; of the cell, 321
Compulsion, 168; of virtues impossible, 211; religious, 238
Concealment, 173
Conception of self enlarges unit, 44
Concepts altered, 5
Concession in self-interest, 30
CONCLUSIONS, BOOK II, CHAP. XVIII, 262
CONDUCT, BOOK I, CHAP. II, 8
Conduct, 4; addresses environment, 8; compensated to race, 100; definition, 8; good and bad, 9; inaction is, 11; is under a law, 262; moral, 3; of many types, 233; present phase, 402
CONDUCT IN EVOLUTION, BOOK III, CHAP. I, 273
CONDUCT-UNIT, THE, BOOK I, CHAP. XII, 102
Conduct-unit, 122; differs for each act, 104
Confidence cannot be compelled, 397
Confirmation in science, 414
Confusion of forms, 346
Conjugation, cumulative effect of, 350; simple, 347
CONSCIENCE, BOOK II, CHAP. XVI, 250
Conscience, 141, 267, 268; freedom of, 411; impels reform, 251; is independent, 252; rapid, 255
Conscientious motive, 251
Conscious altruism, 146
Conscious foreknowledge, 137
Conscious ideals, 169
Conscious, moral altruism, 393
Consciousness fitness of, 393; human, 143

Consensus, 234
Consent of governed, 220
Consequences, 70; dispersed, 83; of right, 265; of wrong, 265; regard for, 26; unavoidable, 115
Conservative instincts, 189
Considerateness, 186
Constancy of development, 342; of environment, 341; of type, 57, 58
Constitution, 219
Constitutional limits, 229
Constructive action, 191
Constructive motive powerful, 205
Continued origination of life, 126
Continuing life of ego-plasm, 369
Continuity reliable, 381
Contradiction of law, apparent, 159
Contradictions, seeming of Nature, 105
Control, governmental, 222, 225; is egotism, 183; not an excuse, 34; of activity, 9; of religion, 239; paternal limited, 215; self, 232
Controlling majorities, 190
Convictions, 251
Co-operation aptitude for, 98
Co-operation grows, 374
Co-operation in higher phases, 392; is morality, 374; Natural, 148
CO-OPERATION INSTINCTIVE, BOOK II, CHAP. I, 141
Co-operative conduct, 102, 180
Co-partnership with offspring, 104
Corals, 153
Corporate self still selfish, 185
Correction, 144
Corrective influence, 29
Corrective process, 75
Courage, excessive, 61
Courts of law, 240
Creation, old concept of, 316
Crime, prevention of, 249
Crimes, 211
Cross-breeding, 294
Cruelty of Nature, 71
Crystallized perfection, 74
Cultivation, 170; of aptitudes, 128
Cumulative effects, 113, 279
Cumulative effects of conjugation, 350
Custom clogs law, 2
Cytoplasm, excess of, 354

D

Daily life of workers, 397
Dawn of life, 127, 311
Death changes surviving qualities, 76; eliminates defects, 75; indispensable, 89; individual, not punitive, 72; is just to the race, 87; is selective, 265; not reckless, 93; not a penalty, 265; of unworthy, 199; too late to destroy, 131
Deaths, two different, 131
Deception detrimental, 261
Decision, 48
Deer, 87
Defensive concealment, 174
Deficiencies, 60; ancestral, 112; replaced, 60
Deficiency, 10
Definable natural system, 274
Definition of good conduct, 115
Degeneracy, 379, 387
Democracy delegates power not right, 224; growth of, 190; modern, 218; not only altruistic government, 235
Democratic nations, 397
Dependence, 157; of predatory creatures, 175
Dependent, child is, 102
DEPENDENT LIFE, BOOK II, CHAP. III, 159
Dependent life the gift of the race, 162
Deposits of bones, 298
Deprivation of assistance, 229
Descended from earlier life, 302
DESCENT OF MAN, BOOK III, CHAP. V, 309
Desires provoked by organs, 160
Destiny in evolution, 282; of life, 3; potentiality is not, 279
Destruction, 72
Destructive impulse, 155
DESTRUCTIVE RIVALRY, BOOK II, CHAP. VI, 172
Destructive rivalry, 266
Destructive truths, 4
Deterioration, 305
Determinants, 341
Development not evolution, 279; of egg, 332; repeats race history, 334; slow, 143
Dictator, morality is not, 376
Differences proper, 210
Different duties of cells, 359
Different standpoints, 36
Difficult position, 244
Diffusion of knowledge, 250
Direct-division of cells, 325
Disability, 230

Discretion, 269
Disease, to be exterminated, 196; war against, 185
Disinterested convictions, 251
Dispersal in just consequence, 83
Disputed law, 117
Dissipation consequences of, 110
DISTRIBUTION BY SEX, BOOK III, CHAP. XIII, 358
Distribution, by sex, 411; of acquired characters, 58; of heredity, 328, 351
DISTRIBUTION OF HEREDITY, BOOK III, CHAP. XI, 346
Distrust is safety, 147
Disunion unavoidable, 208
Disuse and deterioration, 305
Divine authority, 223
Divine control, 51
Divine right, 227
Divine wisdom, 263
Division a consequence of growth, 347; of cells, 325, 347, 352; of labor, 358; of labor, sex aids, 356
Dog for hunting, 92; variation of, 294
Dogma, 286
Dogmas, obsolete repel, 241
Dominating conduct motive, 403
Dormant energy, 352
Doubled nucleus, 348
Doubt, 164
Duality of life, 186
Duration of consequences variable, 82
Duty, 30; is for benefit, 68; of educating, 227; progress is, 199; sense of, 397; to support system, 46

E

Earliest life peaceful, 152
Earliest stages of ethical law, 40
Educating, duty of, 227
EDUCATION, BOOK II, CHAP. XV, 244
Education, 183, 215
Educational service, 238
Education and conscience, 253; an extension of heredity, 247; by faith, 259; completes aptitudes, 247; is unification, 227; moral, neglected, 228; must condescend, 211
EFFECTS OF ENVIRONMENT, BOOK III, CHAP. X, 339
Efficiency, 166; of voluntary activity, 181
Effort purposeful, 9
Efforts, blind, 161; value of, 36
Egg-cell, 364
Egg heredity, 327; of frog, 327
Ego, the true, 200, 252, 369
Ego-plasm, 128; continuous life of, 369; immortal, 5
Egotism, 183
Egotist's idea of fitness, 75
Election, 223
Electoral right a trust, 235
Elemental hostility, 395
Elemental, perception of, 318
Elementary life, 312
ELEMENTARY MORALITY, BOOK I, CHAP. VII, 46
Elementary relations, harmonious, 148
Elevation of the few, 181
Elements, 317
EMANCIPATION OF BELIEF, BOOK II, CHAP. XIV, 238
Embryo, 328; simulates ancestors, 332; sets germ, 371
EMBRYOLOGY, BOOK III, CHAP. IX, 332
Embryology confirms evolution, 338
Embryonic conservation of environment, 342
Emergency, 245
End not seen, 121
Endowment, life is, 407
Enduring beliefs truest, 254
Enemies, 93
Energy dormant, 352; of cell, end of, 370
Enjoyment of short life, animal, 92
Enlarged self, 44
Enormous changes, 124
Environment, 8, 64; does not evolve creature, 279; embryonic, 342; imposes habit, 172; is hostile, 15; response to, 340; to be overcome, 195
ENVIRONMENT AND VARIATION, BOOK I, CHAP. IX, 63
Epiblast, 330
Epidemic disease, 108
Equality, 180, 237; not found, 77; theory, 105
Equipment, ancestral, 63; for peaceful life, 94; of animals, 18
Eradication, 99
Erect posture, 310
Errant nuclei, 354

Error, 213
Errors pardonable, 165
Escape from consequences illusory, 33
Essence of being, 129
Eternal authority, 197
Ethical law, 40
Evasion, 33; impossible, 115
Evasions, 111
Events, all, are causes and effects, 14; conduct modifies, 15; made different, 11
Evidence of conjugation, 367; sufficiency, 262
Evidences, simple, of heredity, 56
Evil conduct, 407
Evils overcome, 196
Evolution, 278; always new, 280; comprehension of, 303; now prevailing, 315; of conduct is upward, 192
Evolutionary aspect of conduct, 4
Evolution is Progress, Book III, Chap. II, 281
Evolution of Sex, Book III, Chap. XII, 350
Evolutions different, 201
Exceptions to normal, 161
Exhaustion cell, 352
Existence in geological times, 30
Existing circumstances, 291
Expediency, 69, 164
Experience, 11, 110; personal, 6
Experiences, 370; with facts, 114
Experimental variation, 208
Experiment, less of, 98
Experiments, Nature's, 61
Extension of scope, 195
Extension (of time) backward and forward, 114
Extermination of unsuccessful, 410; root and branch, 84
Extinct animals, 333
Extinction of aggressive races, 177
Extinction of faithless, 199
Exuberance of increase, 81

F

Failure, apparent, of law, 21; of armed strength, 395; to teach, 249
Faith, Book II, Chap. XVII, 257
Faith, 397; a vehicle for education, 261; enables, 257; is of physical sympathy, 257; redistributed by sex, 260
Faithless, extinction of, 199
Family, 142; a small, 107; jointly responsible, 103; unit, 107
Father and son, 246
Favored few, 193
Fecundated cell, 327
Fecundity, 87
Fellows not passive, 24; unsupported by, 41
Female cells, 354
Fight, 48
Fighting compelled, 177
Final authority, 235; no type, 386
Finality, goal is not a, 191
First cause, 5; law of, 402
Fish, instincts of young, 41; shoal of, 67; spawning, 78, 156; waste of life of, 71
Fishes, gregarious, 174
Fission, 347
Fit conduct co-operative, 180
Fitness changes, 87, 209; in cohesion, 393; is first for today, 383; of altruism, 170; takes new forms, 191
Fitter, survivors are, 76
Fittest, reward of, 123; survival of, 52, 145
Fixed, nothing in Nature, 339
Fleetness and grace, human, 310
Flexibility, 345
Flight disused, 56, 69
Foot, human, 305, 309; of horse, 305
Force, 222; right or a crime, 178
Foreign standard of conduct, 179
Foreknowledge, 137
Foresight absent in early progress, 381; human, 388; selective lessens need of death, 98
Former activity repeated by germ, 365
Form, government of, 58; plan in chromosomes, 328
Forms of cell, 322
Formulated moralities, 212
Fossils, 292; sequence of, 300
Fowl, egg development of, 332
Free Activities, Book III, Chap. XX, 395
Free choice, 164
Free conduct, law of, 379
Freedom, 388; makes efficiency, 181; of conscience, 256, 411; often errs, 213
Free ignorance, 213
Fugitive forms, 295
Full heredity, 327
Function of Death, Book I, Chap. X, 71

Fundamental altruism, 155
Fusion, 347; of cells, 347
Futile variations, 66
Future, 391, 404; a sublime, 136; inferred, 383; promises of, 265; regard for, 113; reward, 191; rights of, 221

G

Gaiety of birds, 47
Gastrula, budding of, 343
Geological record still growing, 297
Geological times similar to present, 307
Geology and embryology, 338
Germ-cell single, 321; division precipitate, 365
Germ-plasm, 129 (see also Ego-plasm); constructs new body for itself, 130; continues part in parent body, and part in new, 130; location of, 369; takes sex, 362; the unchanged, 361; undying, 362
Gift in trust, life is, 161
Goal indescribable, 194; not visible, 191
GOAL OF ASPIRING MORALITY, BOOK II, CHAP. IX, 194
God, personal intervention by, 263
Good and bad, 262; is that which is beneficial, 12
Good conduct, 407
Goodness relative, 39
Governed, the privileges of, 211
Governing restraining not compelling, 224
Governmental duty, 248
Governmental control, 222
Government relinquishing control, 240; to maintain liberty, 232
Governor not a judge, 226
Govern, right to, 219
Graduated effects of death, 79
Gratification of just desires, 398
Gratifications, evil in, 188
Great contribution, the, 369
Greater corporations, 185
Greater life, the, 132, 372
Greater self of greater life, 157
Greater unit of life, 122, 142
Greatest benefit, 193
Gregarious animals, 54
Gregarious creatures, 174
Gregarious habit, 67
Groups, 102, 104
Growth, 324, 372; cumulative, 59; of cell causing division, 347; not necessarily aggressive, 153
Guidance in little things, 245; not infallible, 283

H

Habit, 172; and form, 69
Habits, 56; selected for benefit, 67
Handmaid of life, 376
Harmony, 403
Haste, march of civilization without, 190
Haste, none, 296
Headhunters, 176
Hebrew story of creation, 317
Help, 34
HEREDITY, BOOK I, CHAP. VIII, 54
Heredity, 5, 245; belongs to race, 377; of chromatin is responsiveness, 341
Heredity, part, 328
Heritability of variations, 367
Heretage of continued life, 132
Heterogeneous motives, 204
Higher conduct selfial, 44
Higher phases of organization, 412; phases reached, 278
History explained by biology, 339; in the rocks, 300; race repeated in development of germ cell, 334
Home, liking for, 89
Hope, 284
Horns of cattle, 350
Horse, evolution of foot of, 305; for speed, 92
Hostility is reaction, 275; of death, 81; of Nature softened, 192
Human being proper, 370
Human body, cells of, 320
HUMAN CONSCIOUSNESS, BOOK III, CHAP. XIX, 390
Human distinction, 310
Human foot, 305, 309
Human foresight, 388
Human knowledge, 170
Human morality based on spontaneous, 49
Human organizations, 402
Human participation in Nature, 95
Human record, 301
Humanity extends justice to individuals, 100; in evolution, 264; in primitive liabilities, 19; late or new, 313; one of many species, 308
HUMANITY IN LIMITED PRIVILEGE, BOOK III, CHAP. XVIII, 384

Humanity's strength is social, 99
Humanity under complex motives, 69
Hypoblast, 330

I

Idant, 366
Idealization, 136
Ideals, 210, 277; tentative, 169
Ignorance extermination of, 227
Illogical ideals, 7
Imagination, 7
Immortality, 5, 278; of germ-plasm, 404
Immortality, potential, 131, 142
Immunity against plagues, 196
Imperceptible life, 311
Imperfect abilities, 11
Imperfect knowledge, 319
Imperfection, tolerance of, 210
Impress of experiences upon germ, 370
Improvement of structure, 79
Impulse, 6, 160
Impulsive liberty, 9
Inaction is conduct, 11
Inanimate Nature passive, 15
Incomplete lives, 162
Inconceivable alternative, 74
Increase of numbers, 388
Indefinitely answerable, 103
Indefinite progress, 195
Independence, 34; increases, 250
Independent, conscience is, 252
Indian warriors, 209
Individual answerable, 27
Individual body an accessory, 129
Individual life a tenancy, 131
Individual purposes, 185
Individual responsibility persists, 27
Individual self, 23
INDIVIDUALITY, BOOK I, CHAP. V., 32
Indolence consequences of, 110
Industrial faith, 397
Inevitable consequences, 15
Inexorable law, 106
Infallible, conscience is not, 251
Infancy, disability of, 230; needs training, 247
Inference, 254; inherited, 170; of future, 383
Inferiority, 76
Infinite ages, 124
Infinity, 318
Inheritance, 327; implies duty, 68; Inherited altruism unreasoning, 160; habits, 55; inference, 170; tendencies, 109
Injurious, 12
Injury, wilful, is evil, 10
Innocence, 151
Innocent, conscience is, 256
Innutrition, 352
Inseparable lives, 105
Inspired morality not antagonized by Nature, 50
instinct, 164; and reason, 255; instinct transmitted knowledge, 55
Instinctive altruism, 396
Instinctive animal altruism, 402
Instinctive belief, 21
Instinctive morality, 47
Instincts, 161, 164; of fish, 41
Institutions, religious, 229
Intellect and education, 248; perceives fitness of altruism, 170; slow action of, 245
Intellectual future, 391
Intellectual power, 389
Intellectual progress, 197
Intent, 9
Intention, 12
Interdependence of relations, 102
Interest, joint, 26
Interference, 25
Internal opposition, 208
Intervention, Divine, 263
Intrinsic value of rightness, 120
INTRODUCTORY, BOOK I, CHAP. I, 3
Introductory to Book III, 273
Intuition, 267; enlarged, 255
Invaders, 206
Involuntary inferences, 254
Irresponsibility self-destructive, 380
Islamism, 286
Is life worth living, 135
Isolation, 173; man's, 313
Israel, 287
Issue, the obscured, 40

J

Jails, 249
Joint interest, 26
Judge or governor, 226
Judicial authority, 226
Justice, death's, not for individual, 81
JUSTICE IN DEATH, BOOK I, CHAP. XI, 82
Justice in greater life, 408, 409; is for race-unit, 83; purpose of, 87; to individuals, 94, 100, 409

K

KARYOKINESIS, BOOK III, CHAP. VIII, 325
Karyokinesis, 361
Kin a conduct-unit, 83
Kinfolk-unit, 83
King, 221
Knowledge, altruistically shared, 197; comparative, 284; educated, 248; in advance, human, 170; of death, 90; the new, 3

L

Lake depopulated, 84
Land sinking, 297
Large units of conduct, 108
Late characters most changeable, 335
Later discernments less trusted, 253
Later fossils more durable, 299
Lavish life, 72
Law, 37; conduct is under a, 262; inevitable, 106; inevitably just, 407; is old, 123; of compensation, 136; of compensatory justice, 111; of evolution one for all, 282; of the first cause, 402; rests on altruistic regard, 226; search for, 244
Laws, and codes, 117; are warnings of facts, 120; certain deduced, 97; forbidding crimes, 211; obsolete or respected, 120; old, re-established, 197; supernatural, 51
Leaders, 43, 339
Length of life, animals disregard, 90
Lessened need of death, 99
Liabilities primitive persist, 19
Liability for consequences, 14
Liberated humanity, 213
Liberty, 232, 234; does not mean uncontrol, 378, 380; in beliefs, 239; promotes fitness, 398
Life, all from one origin, 125; antiquity of, 132; becoming nobler, 375; is a loan or trust, 74, 161; is it worth living, 135; not guaranteed, 405; of individual extended, 193; origin of, 125; predatory or altruistic, 266; surviving, 200
LIFE IN EVOLUTION, BOOK III, 271
Life-plasm immortal, 274; precedes structure, 371
Life-producing principle, 264
LIFE'S VALUE AND AIM, BOOK I, CHAP. XVII, 134
Like conditions evolve like forms, 314
Limited term of government, 223
Limits constitutional, 229
Lineal life, 266, 269, 277
Lineal unity, 105
Links, many missing, 312
Little things, guidance in, 245
Lives of sacrifice, 161
Living fowls, 334
Location of germ-plasm, 369
Long time involved, 113
Lost species, 313
Love, 242
Lowest forms of life do not die, 127

M

Maintenance, 171; of law, 229
Majority, 179; choice, 234; right of, 219
Male and female, 356; cell production, 353
Mammalian offspring, 129
Mammals, womb of, 342
Man a product of evolution, 308; maintained by mutual support, 95; not immune, 143; of science, 163; suffers as lower creatures for error, 32
Manchu rulers of China, 206
Man's action part of Nature's, 92
Man's ancestry, misconception of, 309
Many series, 312
Master-cells, 360; plasm, 371
Material machine, 405
Material prosperity, 169
Material reward, 135, 142, 234
Maternal instinct, 189
Matrix, time a, 292
Matter, 23; answer of, 135; subjection of, to life, 413
Mathematical reasoning, 197
Meekness, excessive, 61
Men guided by leaders, 43
Mental and physical interdependent, 61
Mental power, 11, 389
Mentor of morality, 256
Merging and distributing by sex, 322
Mesoblast, 330
Metazoa, egg development of, 332
Microscopy, 319

Militant rulers, 205
Military control, 399
Million days, 124
Minimum of control, 225
Minimum of liability, 73
Ministry in sickness, 166
Minority opposition, 118
Minute successes, 124
Miracle, second superfluous, 300
Misconception of man's ancestry, 309
Missionary efforts, 212
Misunderstanding of time, 291
Mixed conduct, 379
Mixture of motives, 172
Modern democracy, 218
Modification, 73
Modify environment, to, 391
Monkey ancestry, 309
Monotonous life, 67
Moral agencies old, disorganized, 228
Moral civilization growing, 189
Moral conduct, 3
Moral law natural, 189
MORAL MOTIVE, BOOK II, CHAP. VIII, 188
Moral neglect transitional, 241
Moral sense of birds, 48
Moral value of altruism, 150
Morality, 276; a guide, 137; born of association, 44; elementary, 46; distinct schools of, 201; established, 262; founded in benefit, 51; measure of, 267; not religion, 248; of both instinct and reason, 164; power for, 410; teaching of, 248
MORALITY OF THE DUAL LIFE, BOOK II, 139
Mortal bodies, 364
Mortal life, a fragment of greater, 278
Morula, 327, 361
Moses, 119, 249
Motherhood, 157, 258
Motile nuclei, 355
Motive, primitive persists, 69
Motives, 12; blend in right conduct, 178
Mourning of higher animals, 90
MULTICELLULAR BODIES, BOOK III, CHAP. XIV, 364
Multicellular life, 402
Mundane era, 291
Mutability, 293; a principle, 241
Mutual relations, 30
Mythology, Greek, 287

N

National organizations, 217
Nations armed, 189; relations of, 229
Natural right, life not a, 72
Natural selection of moral conduct, 52
Nature compensates, 263; cruelty of, 71; humanity part of, 134; Nature's experiments, 61; seeming contradictions, 105
Necessity, 166
Neglect of moral education, 228
Neighbors, 179
Nerve cells, 331
Nests, 71
New aspect, 404
New character in time heritable, 336; character slowly settled, 368; chromatin not specialized, 341; conditions met by new abilities, 88; evolution possible, 311; facts foundation of morality, 273; habits, 56; habits, some, inheritable, 66; impulse, 385; knowledge, the, 3; the, needs general assent, 216; things experimental, 65; units of pacific consciousness, 396
Next generation, germ for, 371
Nirvana, 74
No fixed standards, 204
Non-conformity to custom, 251
North American Indians, 176
Normal group, 105
Normal life rewarded, 111
Normal Nature, 5
Norman Conquest of England, 206
Nucleus, doubled, 348
Nursing, 163
Nutrition disturbances of, 61

O

Obedience, 42, 399
Object the, of altruism, rights of, 182
Obligation sense of, 54
Obligations to community, 46
Observable, change is, 304
Oblivion, 161
Obsolescence, death removes, 80
Obsolete dogmas, 241
Offense persistent, 222
Offenses against morality, 239
Official privileges, 221

Offspring, 104, 154; of others, 168; relations of, 160; whose, will survive, 75
Old character transmitted, 57
Older judgments, 253
Opportunity, greatest, 65
Opposite qualities useful, 86
Opposition, 25; consideration for, 29; to codes, 117
Options, 199
Order of free unity, 396
Order of principles, 263
Orderly progress, 204
ORGANIZATION, BOOK III, CHAP. XXI, 401
Organization, 146; by faith, 261; human, 267; humanity seeking unity in, 201; in higher phases, 412; makes complex consciousness, 393; perfect, is purpose, 275; principle of, 374; purpose of authority, 224; works for order, 401
Organizations owe support, 232
Organized society, activity of, 165
Organizing impulse chief factor, 191
Organs special for reproduction, 371
Oriental peoples, 176
Origin of life, 125
ORIGIN OF MORAL CONDUCT, BOOK I, 1
Origin of variation, 64
Others interested, 25; recognition of, 390
Over favored, 136
Ovum, 370
Ownership, 48

P

Pacific conduct, 396
Pacific earliest life is, 152
Pacific savagery, 209
Pacific survive, 146
Pantheism, 286
Parallel, embryology with geology, 333
Parasitic luxury, 192
Pardonable errors, 165
Parentage altruistic, 154
Parental education, 247
Parents and children, 102
Participate, several, 30
Participation, mutual, 181
Passive endurance, 8
Paternal control moral, 214
Paternalism, 233
Patriarchal control, 215
Peaceable, benefit to, 30
Peace-loving neighbors, 35
People authority in, 223
Perception, enlarging, 121; limited, 121; of death, 99; of elemental always changing, 317; of higher progress, 376; of value of moral motive, 188
Perfection, 74; development toward, 194
Perpetual youth, 129
Persistence, 143; of aptitudes, 203; of primal motives, 49; of primitive conduct, 381; of savagery, 112
Persisting ego is immortal, 129
Persist, simple laws, 21
Personal ambitions, 223
Personal experience, 6
Personal rulers, 219
Personal self-interest, 33
Philosophic principle, 403
Philosophic wisdom advances, 286
Physical basis of control, 216
Physical force, disuse of, 394
PHYSICAL LIMITATIONS, BOOK III, CHAP. VI, 316
Physical progress, 351
Physical specialization, 358
Physical well-being of thousands, 193
Plagues, 196
Plants, reproduction of, 129
Plumage, 335, 336
Polar bodies, 367
Polarity, 347
Political liberty, 388
Polytheism, 286
Popular control socialistic, 225
Popular expression, methods of, 223
Population, 195
Positive and negative goodness, 116
Positive endowment, life is, 407
Possession, 25
Possibilities of altruism, 192
Possible change, 304
Posterity suffers for evasions, 111
POTENTIAL IMMORTALITY, BOOK I, CHAP. XVI, 128
Potentiality is not destiny, 279
Potentially immortal, 131, 264
Potent, today equally, 124
Poverty an advantage, 76
Power not right delegated, 224; to do, 33
Predatory enemies, 93
Predatory life, 172; life self-limited, 174

Predatory type, 222
Preference, individual, 21; of lineal life, 266
Preparation for needs, 382
Present, 381; the perception of, 318
Present age, 189
Present environment, 382
Present fitness, 280
Present phase of conduct, 402
Preserved environment, 342
Presumption of rightness in codes, 118
Previous studies reviewed, 141
Primal motives, 49
Primary ethics persist, 40
Primary unit, 321
Primeval origin, 406
Primitive conduct, 29; persists, 381
Primitive forms of life, 126; lives, 17
Primitive principle, 198
Primitive responsibility is, 17
Primitive the, is explanatory, 74
Primitive view, 39
Principle, all-prevailing, 403; established, 114, 164
Principles, 40; twenty-five, 264
Privilege, life is, 407
Privileges of the governed, 211; relinquished, 165
Problems, 11
Procreation and faith, 259
Producer, not product, is germplasm, 369
Product of evolution, 308
Progeny, 94; consequences to, 84
Progress, 286; a biological function, 376; by education, 228; continues, 190; death provides for, 73; imperative, 377; in conduct, 264; is exacting, 199; means change, 98
Progressive steps in organization, 402
Prolific animals, 85
Promises, 265
Proof, physical basis for, 277
Property, right in, 179; sacred, 48
Prophet inspired, 145
Prospect, 265
Prosperity, 169, 388; gained by altruism, 234
Protection, 168
Protest idle, 409
Protoplasm, generation of, 319
Protoplasmic cell, 128
Protoplasmic units, 402
Protozoa, 18
Provisional instruments, codes are, 118
Provocation in wealth, 180
Psychological impulse, 160
Psychological reasoning, 384
Psychological understanding increases, 197
Public concern in teaching morality, 248
Public education, 228
Public schools, morality in, 249
Punishment, 73
Punishments, consequences not, 115
Punitive death, 72
Purification demanded, 243
Purpose, harmony of, 253; is benefit, 9; supposed in specialization, 167
Purposes, 384

Q

Qualifications, evolution adds, 376
Qualities inherited from past, 108
Quality superiority of, 95

R

Race-heredity, 349
Race-life, 105, 141, 409; justice comes to, 101
Race, Nature's justice for, 83
Race-neglect, punished, 110
Race-rights not to be ignored, 231
Racial disability, 230
Realities of experience, 114
Reason, 164, 384; effect of, 73; insufficient guide, 245; not at once potent, 144
Reasoned basis, 4
Rebellion of new wisdom, 207
Receptivity, 257
Reciprocating protection, 168
Recognition of worth, 169
Reconstruction assured, 242
Reconstructive effects, 3
Recording fraction of cell, 370; of acquired character, 366
Recurring change, 306
Reduction cell, 356
Re-establishment of old laws, 197
Reform, 251; political, 235
Refreshing of governing impulse, 223
Regeneration, 81, 241, 373; by germplasm, 362
Regression, 379
Regressive change, 305
Regular type inherited, 57
Regulating function, 233

Relations, 102; between nations, 229
Relationship, 134
Relation to Animate Nature, Book I, Chap. IV, 24
Religions, ancient show intellectual grade of teachers, 287; show progress, 286
Religion still patriarchal, 238
Religious compulsion, 238
Religious institutions, 229
Religious teaching, 227
Relinquished function, 165
Remedial, death is, 80
Reminiscent development, 356
Remote future, 404
Remote inheritance, 112
Remote past, 404
Remote purposes, 384
Remoter consequences, 188
Removal again to race, 85
Representatives, 219, 234
Reproduction, 5, 371; of plants, 129
Reptiles, 342
Republic, 223
Reserved, germ cell is, 371
Resources, 177
Respect for power of others, 26
Responsibility for wrong not toward victim, 35
Responsibility in Relation to Nature, Book I, Chap. III, 14
Responsible ego, 406
Responsiveness in heredity, 341
Resting cell, 357
Restitution, 37
Restraining by government, 225
Restraining forces, 10
Restraint governmental, 224, 239
Restraints, 24, 38, 210
Results, 20; of conduct, evolution shows, 281; proportionate to rightness, 114
Retardation of progress, 182
Retrogression, 232
Revelation, 145
Reversions, 336
Revolution, 223
Revolutionary change, 384
Revolutionary struggle, 255
Reward beyond description, 198; material, 135; of fittest, 123; the material, 142
Right and wrong, 404
Right based in heredity, 236
Rightness not intrinsic, 179
Right of democracy, 226
Right prime impulse is, 152
Right rests on fitness, 220
Rights, individual limited, 224
Rights of property, 48, 50
Right to govern, 219
Robbery, 35
Rocks, history in, 300
Rulers are personal, 221
Running birds, 56

S

Sacrifice, 141; a function of inherited forces, 160; altruistic, 108; may be in error, 159; in reproduction, 156
Safety reduces death, 98
Scale, time, small, 291
Science, confirmation in, 414; is illumination for all, 197
Scientific research, man of, 163
Secondary acts, 37
Sectarian teachers, 241
Seedlings selected, 76
Segmentation repeats, 332
Selection by survival, of deer, 89; human, is natural, 90; in survival, 84
Self-conscious self-evolution, 394
Self-control, 378
Self-corrective, selfishness is, 199
Self-defence, 177
Self-interest, 8
Self-investigating race, 136
Selfishness is undue self-regard, 28; optional, 199; penalized, 38; self-corrective, 199
Self-love, 28
Self-preservation, 265; by altruism, 158; capacity for, 18; impulse of, 122
Self-recognized progress, 390
Self-regard imperative, 28; not selfish, 28
Self-sacrifice demanded, 377
Self-unit expands, 29
Sense of duty, 397
Sequence of forms, 300; of fossils, 300
Service test of, 65
Sex, 353; disability of, 230; function of, 58, 356, 363; function secondary, 130; maintains altruism, 156; maintains faith, 258; remedies deficiencies, 60
Sexless reproduction, 322
Sexual differences, 355
Sexual reproduction, 347

Shapes of cells, 322
Shell fish, 32
Shifting burdens, 166
Shyness instinctive, 86
Sickness, ministry in, 166
Simians, 310
Similarities, 363
Simple, upward from, 7
Simplicity of many forms, 311; to complexity, 400
Sincerity, 257; respected, 250
Single-celled creatures, 339
Sinking of land, 297
Sin, separated from crime, 239
Sins of the fathers, 106
Sister lives, 166
Skill, 180
Skin-cells, 330
Skin changes, 306
Slow action of intellect, 245
Slowness acceptable, 302; of change, 289
Smaller numbers of progeny, 94
Small part of man in geological record, 307
Social alliance, 153
Social complexity, 20
Social instinct the basis of higher conduct, 43
Socialism, 233
Socialistic type of government, 225
Social units diversified, 217
Societies, 217
Society, 165
Solitary habits, 174
Solitudes, animals of the, 174
Somatic cell, germ cell emits, 365; record acts, 367; functions of germ cells, 370
Source of authority, 220
Source of rightness is Nature, 118
Specialization, gain by, 166; physical, 358
Specialized animals changing, 124
Specialized cells, 323, 328
Specialized labor, 163
Specialized leadership, 225
SPECIALIZED LIFE, BOOK II, CHAP. IV, 164
Specialized teachers, 241
Species, 295; establishment of, 402
Sperm nuclei, 365
Spider, methods of, 65
Spiritual value, 375
Spoiled, the, who fear, 136
Spontaneous variation transmitted, 367
Spores, 352
Squirrels, fearless in parks, 86
Stability of government, 226
Standard not possible, 413
Standards, 116; not fixed, 39, 276; progress upsets, 206
Steadfastness, 164, 345
Sterile women, 76
Sterility humane eradication, 99
Strength in mutual support, 205; vital, 94
Strongest not always fittest, 76
Structure cells, some mature, 370
Struggle, is life worth the, 135
Subjection, 162; to laws, 16; to others, 34
Sublime future, 136
Subordinate cells, 360
Subversion of instincts, 161
Success, 9
Successful survive, 410; use of ability, 16
Successive generations, 83
Suffering not compensated, 35
Sufficiency of evidence, 262
SUMMARY AND CONCLUSION, BOOK III, CHAP. XXII, 404
Superfluous miracle, 300
Superiority, 95, 151, 202; denied, 224
Superior skill, 180
Superior wisdom, 221
Superlative wisdom, 171
Supernatural control, 262
Supernatural laws, 51
Support, 259
Supposition of purpose, 167
Suppressed impulses, 160
Suppression of life necessary, 72
Surplus accumulating, 110
Survival, conscience is a, 254; morality compared for, 146; by continued fitness, 386; of fittest, 71, 75, 191, 393; of variations, 201
Survive, who will, 75
Surviving variation, 349
Swallows, conduct of, 47
Synopsis, 274
System, none immutable, 236; of compensations, 5
Systems, two contrasted, 151

T

Teaching of laws, 249
Technicality of expression, 4
Temporal power, loss of, 240

Temporary departures, 177
Temporary privilege, 74
Ten commandments, 119
Tendencies, 109; of cultivation, 170
Tendency toward unity, 275
Tentative ideals, 169
Term of government, 223
Terrestrial habit, 344
Test for survival, 147; we are now in the, 133
Theism, 286
Theologies, 242
Thought, independence of, 250
Thousands of years, 291
TIME AND CONSEQUENCE, BOOK I, CHAP. XIV, 112
TIME AND THE GEOLOGICAL RECORD, BOOK III, CHAP. III, 289
Time, appreciation of, 124; available, 190, 290; extension, 114; unlimited, 315
Today equally potent with past, 124; fitness for, 383
TODAY IS ALWAYS THE DAY OF EVOLUTION, BOOK III, CHAP. XVII, 381
Tolerance, 181, 183; extending, 206; habits of, 173; of imperfection, 210
Toleration, 146
Torpor in excellence, 202
Toxic products, 61
Trade, 212
Traders, faith of, 397
Tradition, governmental, 223
Training, 247
Transitional aggression, 175
Transitory nature of definitions, 179
Transmission of acquired character, 58;
Transmission of variations, 367
Transportability, 354
Trees, nests in, 56
Trend of movement, 190
Tribe, 142
True democracy highest evolution, 400
True ego, 200
True ego is that of greater life, 372
TRUE EGO, THE, BOOK III, CHAP. XV, 369
Trust a, fulfillment of, 160
Trust, faith is, 258
Trust, life is a, 74, 269
Truths, two in evolution, vital, 315
Tunicata, 386
Twenty-five principles, 264
Two types of conduct, 275
Type of altruistic government, 223
Type regular, 57
Types definite, 351
Typical features, abstract of, 357

U

Ultimate effects, 116
Uncertain future, 383
Uncertainty, 282
Unconscious morality, 46
Understanding, 197
Undying ego, 130
Undying germ-plasm, 362
Unfixed heredity, 331
Unicellular life, 402
Uniformity, 349
Unintelligent association, 41
Unions, 217, 232
Units enlarge with broader morality, 214
Units larger, 393
Units of activity, 374
Units of lineage, family tribe, 142
Unity, 413
Unity by education, 182
Unity by faith, 261, 397
UNITY OF LIFE, BOOK I, CHAP. XV, 122
Universal motive, 401
Universe, knowledge of, 197
Unlimited time, 289
Unreasoning devotion, 160
Unseen results still real, 22
Unseen right, 188
Unworthy, 199
Upsetting of standards, 206
Upward progress in all life, 285
Useful animals bred by man, 91
Useful new things, 65
Useless sacrifice, 193

V

Value in sacrifice, 193
Value of support, 68
Vanity, 221
VARIABLE IDEALS, BOOK II, CHAP. X, 201
VARIABLE ORGANIZATION, BOOK II, CHAP. XI, 208
Variation, 342
Variation, freedom promotes, 234
Variation, needed for higher life, 97

Variation, not accidental, 388
Variations, 64, 367, 368
Variations, amalgamated, 351
Variation the rule, 64
Varied life promotes rapid change, 67
Vertebrata, 385
Vertebrate structure, 314
Victim of wrong, 35
Violent champions, 213
Virtue, 39
Virtue, not to be compelled, 211
Virtues, ancestral, 112
Virtues, distributed, 260
Virtues, evolution of, 375
Visible need, 113
Vision enlarges, 191
Vocabularies unintelligible, 4
Volition, 8, 225, 380
Voluntary, altruism is, 168
Voluntary association and activities, 181

W

Waning of certain powers, 306
War conduct, 204
Warnings, laws are, 120
Waste, 276
Wasteful methods, 173
Watch dog, 56
Weaklings, expulsion of, 172
Wealth or poverty, 76
Wealth, value of, 111
Wealth which provokes, 180
Weeding out, death a, 88
Whence come we, 316
Whither going, 316
Why morality in animals, 52, 54
Will, 19
Wings of fowls, 335
Wisdom, 171; habitual inherited, 245; not infallible, 410; sees responsibility, 33; to be acceptable, 226
Workers, good faith of, 397
Work of birds, 48
World-contact new, 202
World population, 195
Worth, 169
Wrongdoing, persistence in, 143

Y

Yesterday, a thousand years but as, 291
Young, fitness of the, 77
Youth and age, 6

Z

Zeal in new actions, 255

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